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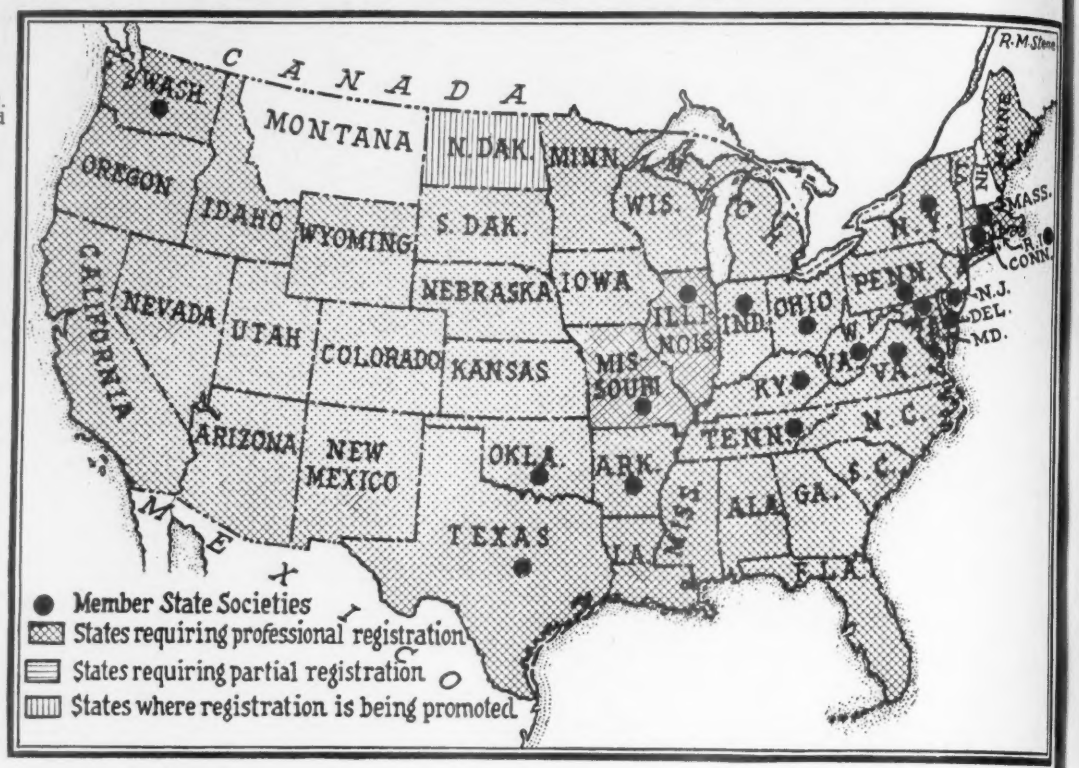

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Let us fight vigorously to maintain our professional standing and offer inducement for younger men to fill our ranks as we pass on.

Unionism is an issue in Engineering; the Professional Engineer must maintain his proper place in the social-economic order.

The State of South Carolina

CERTIFICATE OF INCORPORATION
BY THE SECRETARY OF STATE

... ref, Corvallis, Oregon

.. Keith Legare', Columbia, South Carolina,

... of the officers or agents designated to supervise or manage the affairs of the National

Council of State Boards of Engineering Examiners

which has been duly and regularly organized, did on the 28th day of

... 1938 A.D. ... with the Secretary of State a written declaration setting forth:

That, at a meeting of the aforesaid organization held pursuant to the by-laws or regulations of the said organization, they were authorized and directed to apply for incorporation.

That, the said organization holds, or desires to hold, property in common for Religious, Educational, Social, Fraternal, Charitable or other necessary purposes, and does not desire to issue any shares of stock and proposes not to issue the same for the purpose of profit or gain to the members, otherwise than is above stated, nor for the insurance of life, health, accident or property; and that three days' notice in the The State , a newspaper published in the County of Richland , has been given that the aforesaid Declaration would be filed.

And Whereas *Said Declarants and Petitioners* further declared and affirmed:

FIRST: Their names and residences are as above given.

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Charles P. Scott,	New Haven, Conn.	Vice-President
F. G. Lords,	Ames, Iowa	Past President
... C. Trent,	Salt Lake City, Utah	Director
F. O. Hammerman,	Rapid City, S. D.	Director
C. ... Ham,	Raleigh, North Car.	Director
C. E. Myers,	Philadelphia, Penn.	Director
T. Keith Legare'	Columbia, South Car.	Executive Secretary.

SIXTH: That they desire to be incorporated: In perpetuity.

Now, Therefore, I ... W. ... Blackwell , Secretary of State, by virtue of the authority in me vested by Chapter 158, Article III, Code of 1932 and Acts amendatory thereto, do hereby declare the said organization to be a body politic and corporate, with all the rights, powers, privileges and immunities, and subject to all the limitations and liabilities, conferred by said Chapter 158, Article III, Sections 8158-8159 and 8160, Code of 1932, and Acts amendatory thereto.

GIVEN under my hand and the seal of the State, at Columbia, this 28th day of March in the year of our Lord one thousand nine hundred and thirty eight and in the one hundred and sixty second year of the Independence of the United States of America.

Secretary of State.

Unionism - An Issue In Engineering

By **DEAN CLEMENT J. FREUND**
College of Engineering, University of Detroit

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ONE thing must be clear before proceeding with this more or less delicate discussion. This article is not inspired. There are no secret collaborators. The article does not in any way represent the policy or viewpoint of the Board of Directors of The Engineering Society of Detroit or the editor of The Foundation. It is nothing more or less than it pretends to be. Nobody except myself can be held responsible for it or any portion of it.

But I protest that I have given thought to the problem of unionism in engineering. I have had to because it so happens that it is my business to train young engineers, and in that business I have often enough become entangled in unionism perplexities.

Unionism is an issue in engineering. There is no question about it, whether you like it or not. Labor unions are penetrating into engineering occupations. The leading technical union is the Federation of Architects, Engineers, Chemists and Technicians (F.A.E.C.T.), affiliated with the C. I. O. Officers of the Federation boast of more than 8,000 members, although there is no evidence that they have recruited men of unquestioned professional standing. They have claimed significant progress in organizing the Minnesota Highway Department, Briggs Manufacturing Company of Detroit, Pittsburgh plant of the Carnegie-Illinois Steel Company, Rankin plant of the Bethlehem Steel Company Ambridge plant of the American Bridge Company and the United States Navy yards. They have claimed strong locals in California, Colorado, Wisconsin and New Jersey. In the Federation's 1940 convention they undertook a campaign to require a union label on "all drawings, erection diagrams, surveys, plans, shop and field details and laboratory reports." I could multiply figures, names, places and facts.

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But if he is conscientious he does not join immediately. He is puzzled. He is conscious of the traditions and ideals of the profession. Is it proper for him to join a union? He does not know. It seems to me that that he entitled to an answer and that the engineering profession ought to give him one.

I do not know, of course, what kind of answer the leaders of the profession might formulate, what kind of policy they may some day adopt. But if the young man should come to me and say, "The pressure is on me. Should I join an engineering union?", I think I should counter by asking, "Do you or do you not aspire to professional standing in engineering?" He will demand to know "Just what do you mean by professional standing?"

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Everybody knows, of course, that there are thousands of men in the broad field of engineering who do not have professional standing, in spite of their skill and excellence. They are the draftsmen, testers, instrumentmen, checkers, calculators, experimenters, technicians, subordinate functionaries of one kind or another, who do not assume full responsibility but work under direction. Dr. Wickenden has referred to them as the "great engineering fraternity."

Everybody knows, likewise, that college graduates rarely pass from the outer "fraternity" into the "inner professional nucleus" before they are four or five years out of college. Very many of them, unfortunately, never achieve professional standing at all.

There may be no sharp line between professionals and others, as in medicine or law, and many thinking engineers have no desire whatever to draw such a line, but it is never difficult to distinguish those engineers who clearly have professional standing from those who clearly do not have professional standing.

I tell the young man all this, or remind him of it and then say, "If you aspire to full professional standing in engineering and all that it implies, dignity, respect of the community, respect of your fellows, you had better not join a union." I say that to him because it seems to me that a profession and a labor union are so nearly contradictory that he cannot possibly belong to both at the same time. And it requires no painstaking and comprehensive comparison of professions and unions to make this clear; a quick check of one or two points will be sufficient.

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[illegible] which has been duly and regularly organized, did on the 28th day of [illegible] A. D. [illegible] and the Secretary of State a certain declaration setting forth:

That, at a meeting of the above said organization held pursuant to the by-laws or regulations of the said organization, they were authorized and directed to apply for incorporation.

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Professional Individualism

A common earmark of all professions is the markedly individual character of the professional man and his work. When he performs a professional task he performs it himself. He may have assistants, hundreds of them, but the full responsibility rests upon him alone. The

surgeon who performs an operation has the direct help of nurses and attendants, and the indirect help of more technicians, mechanics and various functionaries than he ever thinks about, but he alone must answer for the outcome, and the patient knows it, and so do the nurses, technicians and mechanics. Dr. Wickenden insists that a profession is "a type of activity marked by high individual responsibility." Professor R. M. MacIver contends that "The doctor, the lawyer, the architect, the minister of religion remain individual practitioners." According to Dr. Abraham Flexner, "Professions involve essentially intellectual operations with large individual responsibility." General Goethals was commissioned to build the Panama Canal because he had a personal individual reputation as an engineer.

On the other hand, solidarity is a common earmark of labor unions. The individual union member is lost in the mass. He expects to accomplish nothing for himself or by himself. The union agent runs his business for him, and the agent represents not him, particularly, but the whole union to which he belongs. The agent never permits employers or the public to forget that they are dealing with no individual workman, but with a powerful workingmen's organization. In his "Capital and Labor," Dr. John A. Ryan pointed out long ago that "To attain a position of equal bargaining power, laborers must act as a body." The famous Section 7a of the National Recovery Act ordained that "Employees shall have the right to bargain collectively through representatives of their own choosing." The solidarity of labor unions is really too obvious. Any more discussion of it would be a waste of time.

Must Make His Choice

Surely there is a vast gulf between the professional man's personal work and responsibility on the one hand, and on the other, collective bargaining by labor union agents on behalf of multitudes of unknown and unidentified workmen. No young engineer can be big enough to straddle the gulf; he must take his stand on one side or the other.

Hairsplitters will argue that there is no gulf at all, that the professional man is personally responsible only for the tasks which he performs, and that this responsibility need not prevent him from joining others of his kind in a labor union to exert pressure for the largest possible compensation. This is an artificial distinction which cannot be made in practice. Work and compensation for work are too closely bound together in the minds of most people. Can you expect even the most unselfish and public spirited engineer to accept a rate of pay which a union agent who never heard of him has determined for him and a thousand other engineers, in a single negotiation with client or employer? Hardly.

Again, the chief aims of professions and of unions are as far apart as the poles. The principal purpose of professions is to advance the public well-being, and especially, if need be, the public well-being in perference to the well-being of the individual member of the profession. The principal purpose of labor unions is to fight for adequate, or constantly more and more compensation for the members, depending upon conditions. There are secondary aims, to be sure—to increase membership, to secure contracts with employers, to exert political influence, to control the workingmen in the steel or shipping or automobile industry, to organize strikes—but these are merely auxiliary to the primary aim. One may read page after page of union proceedings and union publications without finding a single word to suggest that the officers or members ever give thought to the public advantage.

Aim Is Wage Increases

The F. A. E. C. T. is a typical labor union in this respect. Its concern is for the well-being of its members. Prior to the 1940 convention of the Federation, President Lewis Alan Berne declared that the majority of technical employees are "beginning to raise questions relating to job tenure, salary, proper classification, discrimination against older men, their relations to production employees," and announced that "Our coming convention will seek to answer those questions and develop a program of action for their satisfactory solution."

News releases from the F. A. E. C. T. have stressed this position from the start. The first national effort of the Federation "defeated the unfair wage provisions of the N. R. A." When the Society of Designing Engineers affiliated with the F. A. E. C. T., Mr. John L. Lewis wrote to them that "I feel that considerable advantage in bettering the economic position of the technical worker will accrue from this consolidation." The Federation boasts of wage increases in Los Angeles, New Jersey, the Queensborough Housing Project of New York City and in the W. P. A.

All this is as it should be, *for a labor union;* this sort of activity is the principal business of labor unions. But there has certainly been little or nothing in the history of the F. A. E. C. T. to convince anybody that the organization has, in the words of Mr. James H. Herron, "any serious concern for the public welfare, or at least not that type of concern for the public welfare in preference to personal and group welfare which should be characteristic of any vocation which pretends to be a profession."

It is unlikely that the officers of the F. A. E. C. T. will ever invite Dr. Vannevar Bush to speak before a convention of the Federation and tell the members, as he told the American Engineering Council in 1939, that "In every one of the professional groups, however, will be found the initial central theme intact—they minister to the people. Otherwise they no longer endure as professional groups"; and that "engineers go along heartily in developing a professional consciousness, a code of action, a philosophy which implements a desire to be a truly professional group, oriented primarily toward the advancement of the public health, safety, comfort and progress"; and that engineers should strive for "heights of true professional attainment . . . where the watchword is that old, old theme which has never lost its power, and which may yet save a sorry world, simple ministration to the people."

Union vs. Profession

Can an engineer be a labor union member, attend meetings regularly as a good member should, listen repeatedly to discussions about wage rates, pay increases, strikes, strike votes, strike benefits, picketing organization, contract arrangements, membership campaigns and organization projects, all having to do with getting more and more for the members (however badly they may need it), and still cherish as the paramount objective of his work, his profession and his life, the well-being of the public, "simple ministration to the people"? A few exceptional men possibly can, the preponderant majority cannot. The majority must devote themselves

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Some Relationships of Engineering Practices To Conservation

Address Delivered at the Missouri Society of Professional Engineers Convention on Friday Morning, October 17, 1941

By **I. T. BODE**

Director, Conservation Commission, State of Missouri, Jefferson City, Missouri

IN considering the relationships of engineering practices to conservation the engineer, the same as the rest of us, asks first of all whether or not such a relationship is worth considering from the standpoint of human welfare and activity and from the standpoint of investment and return.

While data with regard to conservation values and uses are difficult to obtain the following may give some idea of the size of the problem, the number of people affected, and the investment values involved.

Some Conservation Values

In "A Book on Duck Shooting" by Van Campen Heilner, we are told that, if wildfowling, or in other words, the sport of hunting waterfowl were out of the picture, it would make worthless an investment of some $76,379,990. This is investment in land, properties, buildings and other capital investments. A survey from "Ducks Unlimited" shows that some 2,570 resident caretakers, wardens, and other employees would be out of employment. A recent survey by the Federal Fish and Wildlife Service indicates that there are some 13,500,000 licensed hunters and fishermen in America. We know, of course, that in addition to this there is a large number of hunters and fishermen who are not required to take out licenses or permits. It is probably conservative to say, therefore, that there is at least double the foregoing number of people directly interested in hunting and fishing. When we had 20,000,000 unemployed in the country, it became a national problem of first magnitude and it was apparent that consideration of the welfare of this size group of people was worth many headlines and a good many inches of space in our newspapers. It would seem, therefore, that with better than a seventy-six million dollar investment and with some twenty or thirty million people involved, the conservation problem certainly touches human values in a large degree.

Not long ago *Time* magazine in a survey discovered that 40% of American business and professional men liked to turn to hunting and fishing as a recreation and relaxation.

In the Missouri Planning Board report for 1938, we find that over 447,000 visitors availed themselves of the opportunities provided in the State's parks. This was a total of 6½ visitors per acre of park area, or 477 visitors per acre of developed park area. A short time ago an Ozark Playground Association survey showed that each tourist in the state spent an average of $24.00. If, therefore, there are twenty to thirty million hunters and fishermen in the country and each spends only $5.00 per year in pursuing his recreation, this alone would be a business turnover of one-hundred million dollars per year.

One could continue to cite figures for a long time, but I believe these are enough to make all of us realize that we have an investment and an industry surrounding conservation that is certainly of no small magnitude.

The Human Welfare Element Most Important

Outside of the pure financial consideration, however, there are human elements even more important. It is true that many of us are interested in fishing, hunting, trapping, forestry, or other elements in the out-of-doors. Why? Is it for a small group of "playboys" who can afford to pay large sums to enjoy their sport? I think not. We can be thankful that in this country fishing and hunting is still a recreation to be enjoyed by practically every person. This is not so in some of the older countries where they have lost the major portion of their outdoor capital stock and resources, and where hunting or fishing can be enjoyed only by the man of means. In this country the farmer and the farm boy can still use trapping and the product of fur as their own resource. The farmer still has a right to use the timber on his own land without dictation and to his own benefit. Anybody, from anywhere can fish.

All of these things mean human welfare, higher social standards, wholesome youth training opportunity, and invigorated mental capacity. If you want to realize what is referred to by these terms, just stop to think why you or your boy or your wife or your daughter want to hunt, fish, go picnicking, look at the birds, or view the wild flowers and natural scenery. You cannot give the answer in dollars and cents, and yet you know that without these things, life would be much harder and civilization would be much less contented.

It is all of these things that the Conservation Commission in Missouri is trying to keep before it in developing its program and activities.

Conservation Interests Cannot Be Isolated

If these things are valuable and worth preserving, then certainly we must attempt to analyze the problem involved and to determine what fundamental elements underly the approach to a solution.

Most important of all, in my opinion, is a realization that there is no such thing as a separation or isolation of the various interests involved in the use of our resources, whether it be for financial gain, industrial development, or aesthetic purposes.

In presenting the following examples there is no intent whatever to measure comparative values or importance. The only purpose is to make clear the assertion that isolation of interests is impossible.

It is impossible to consider development of hydroelectric plants in our streams without realizing that the natural flow of those streams will be affected and that the original environment will be changed, and that this in turn will affect the aquatic flora and fauna to a greater or lesser degree. It is impossible to consider the development of any large industrial plant requiring disposal of waste without realizing that nearly all such plants contribute to the problem of pollution of streams. It is impossible to consider the matter of making available for agricultural purposes, areas of land through drainage, stream straightening, etc. without realizing that all of

these practices will naturally affect the wildlife picture, especially when it comes to trying to solve the problem of maintaining waterfowl shooting opportunities. Most important of all, it is useless to consider the problem of attempting to maintain adequate populations of upland game without realizing that the environment in which these species live is absolutely dependent upon the soil, agriculture practice and type of land use.

If these predications are any where near sound, then I believe we can begin to understand that there is a rather direct relationship between the engineer and many other professions and the conservation problem.

Solution Rests Upon Basic Business Principles

The second important consideration in attacking the job of solving the conservation problem is a recognition of the basic principles upon which a solution must rest. There is only one fundamental formula. It is the same formula that applies to banking, industry, agriculture, or any other business.

First, there must be adequate capital with which to provide the necessary elements to carry on production. In terms of wildlife, this is breeding stock. Without an adequate capital or breeding stock, it is impossible to consider the harvesting of crops by way of game or fish taken. Therefore, in wildlife, forest, or conservation of any other resource which is renewable, the first aim must be to maintain the capital or the breeding stock.

Second, as in business, capital is useless unless it has an adequate place in which to operate. If you cannot invest capital and cannot give it opportunity to work for you, it will not produce interest. Again, in terms of wildlife or forestry or other renewable resources, unless we can give our breeding stock or our producing stock adequate environment in which to carry on normal life functions and thereby to produce a surplus or interest year after year, our breeding stock will do us no good, and we will have no opportunity to enjoy the products of natural resources over any material length of time. Our job in wildlife and forest conservation, therefore, is to create adequate environment so that surplus crops may be produced.

The third element in this fundamental formula is that, given adequate capital, given a place for it to operate in, it will be productive for only a short space of time unless there can be exercised some control of use of the products of capital. If the already existing capital is producing at maximum capacity there can be no increase in production unless there can be an increase in the capital investment, generally speaking. It, therefore, becomes necessary for us to watch our accounts so that we do not use up more than what is produced as interest or surplus. In terms of wildlife and forest conservation, this means that the amount of game, fish, trees, etc. that we take or harvest must not exceed the annual production. If, as is the case in Missouri today, our breeding stocks are depleted and we want to build these up so that in the years to come we will have a larger opportunity to utilize a larger harvest, it then becomes necessary for us to so regulate use that we take a little bit less than the annual surplus produced. By so doing we have some hope of building up a larger capital or breeding reserve, which in turn can produce for us a larger surplus, and thereby increase our opportunity for more liberal taking or use. This we are attempting to do through a more intelligent application of regulations governing the amount that the individual may consume year by year.

These are the fundamentals that the Missouri Conservation Commission is trying to keep before it in building its entire program, including the matter of making regulations. I believe that, if every individual will keep in mind, he will understand much more clearly why the Commission has seen fit to take the steps it has taken and to make some of the regulations it has made.

How Engineering Practice Effects Conservation Interests

Speaking more specifically with regard to the relationship of the engineer to all of these things, I want to give you my idea of how the engineering profession influences our conservation program.

The engineering relationship to the conservation program, while it may not be the most important, is certainly among the most outstanding. If we refer back to the examples cited earlier, there can be no question about engineering practices affecting conservation values.

The most important affect on conservation, in my opinion, is the disturbance or modification of natural enviornment. The Lord gave human beings certain capabilities of adapting themselves to modified environment, and this rather rapidly. He has given other animals the same capability, but by comparison with humans, to an infinitesimal degree. Plants and lower animals adjust themselves to changes in environment very slowly, if at all. To cite a specific example, it would take generations of time to get wild ducks and geese to inhabit upland areas where there was no marsh or marsh vegetation. It is not to be wondered at that in the State of Missouri the waterfowl population which chooses to stop and rest on its way north or south is so tremendously reduced—we have taken away the biggest part of the natural environment. And again, the example is used only to place before us the facts.

How Can The Engineer Assist Conservation Interests?

If it is true that engineering practice is one of the most important elements in modification of wildlife environment, then certainly all of us ought to be interested in a study of some of the things that we might do to even off the disturbance.

The following suggestions may be worthy of consideration by the engineering profession.

First of all, it is my conviction that every engineer should receive a thorough grounding in conservation in its broadest sense. This needs to be more than a superficial one or two-hour lecture-course during one term of the engineer's training. Certainly in this day and age when so much attention is being given to the matter of saving of soils, checking of floods, control of watersheds, hydra-electric development and other engineering work, a competent engineer should have in his background a pretty thorough understanding and appreciation of the human and natural elements affected by the works he plans to introduce. I feel certain that a great deal of the difference of opinion that now exists between the engineer, the hunter, the fishermen and other people interested in the out-of-doors and conservation values would disappear, if the engineer had background and training in sensible, broad-minded conservation work.

While there have been some efforts made at studies bearing upon some of these relationships, I believe it is safe to say that, by and large, the matter of careful fundamental research on the part of the engineer to determine how engineering practices might preserve conservation values is practically nil. I would, therefore, recommend that the engineering profession establish a genuine research program dealing with the relationship of engineering to all conservation interests.

The last recommendation is that the engineering profession give more attention to some of these conservation values in their planning and design work. We all

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Whether Weather Is To Be or Not To Be

By **C. F. MERRIAM**

FROM time to time storms of considerable violence sweep the country. These are not the ordinary storms that carry death and devastation in their wakes, but cause nevertheless no little excitement. These generally begin with a modest announcement that some investigator, after years of study of records going back to I don't know when, has at last discovered the secret of the periodicity by which some natural phenomena, such as exceptionally dry periods, has occurred and will occur from now on until doomsday. The public is rather eager to snatch up this magic key by which the future may be prognosticated, and thus foresee all of the consequences which follow and incidentally clean up a bit of money thereby.

The storm rages depending upon the popularity of the discovery and the degree to which it is popularized artificially—and then like most things of meteoric nature, passes rather quickly into oblivion. Just as the trails of burned out meteors are of great interest to astronomers, the few sparks left by these passing outbursts of scientific revelation also have their points of absorbing interest. It is from these trails that we may learn much of the fundamental nature of their origins.

In any consideration of cycles, which are at the foundation of all these declarations, it is necessary to face the fact that we are attempting to match some natural manifestation with a mathematical concept. Thus it is that we must first examine the appropriateness of our procedure and the limitations, if any, that might effect the validity of deductions so derived. In simple language have we done nature an injustice by setting up a mathematical template and then extending it into the future merely by continuation of the elements seen in the part that fits the past and then expect that nature will fit the template?

In certain cases the answer is definitely yes. The wave pattern of a musical note can be completely analyzed, and its components accurately determined. As long as the note continues to be sounded this form, even though complicated, will be repeated ad infinitum. Tides too conform to prediction based upon continued repetition of a vast variety of attractions and repulsions of the moon and the sun. Once the tidal elements are determined, they may be set up on a machine and the rise and fall can be predicted for years in advance, subject only to the disturbing effects of the wind, etc., which are non-periodic.

If good for tides, why not for weather? Considerable effort has already been expended in subjecting meteorologic data to the same analysis in the hope of unraveling just as in the case of the tides, the elements which in the past have caused those variations seen in the records.

The curious thing is that all such efforts are apparently successful for a very simple but important reason. Any curve representing any phenomenon plotted against time can be reproduced with the desired degree of accuracy by combinations of simple wave forms known as sine curves. Therefore, it follows that whatever data one starts from, it is always possible to find a combination of sine waves which will reproduce past experiences exactly. Having conformed unvaryingly perhaps for centuries to a mathematical formula it is to be expected that nature will not be so perverse as to take just this present moment to depart from it and run off at a tangent. The situation in brief is just this: if these cyclic components are real and have true significance, nature will persist in following them like the rise and fall of the tide, but if they are merely mathematical building blocks which happen to fit together to conform with past observations they have no more relation to the whole than the tiny stones in a great mosaic. Nature is consequently not bound to obey the purely artificial creations of the human mind.

The cyclic components in past records are made to stand out from the otherwise confused mass of data in several ways. One class of these might be considered as mathematical analogies to wave filters. When set for a given wave length, or periodicity, the response to cyclic variations that are completed within approximately the given time is strong, while variations of other frequencies are suppressed. Persistence of cycles having a fixed period is well brought out by a number of ingenious optical methods. In the use of any of these the assumption is made that the periodicity remains constant, a serious limitations in that in this respect there is probably the most important difference between nature and our mathematical counterpart. In all probability the cycles if they occur at all are not fixed in length, but are cycles only in the sense that they consist of a repeating series of events without guarantee as to the constancy of the time required for their completion.

Other differences between mathematics and nature must likewise be recognized. In the analysis of tides and musical notes we see the application of algebraic addition of components to produce the resultant form. Two waves may cancel or reinforce each other in exactly the same manner that can be demonstrated graphically on the drafting board, but whether two influences which might in themselves give us bad weather will give us doubly bad weather, or only a little bit worse weather, or even three times as bad weather, we simply don't know. Consequently, the assumption that the data can be taken apart the way other wave forms can is rather risky.

Still another assumption is frequently made that the effect of these influences can be represented quantitatively by a sine curve with gradual rise and fall. If we may judge from the sun spot numbers the so-called solar cycle is far from a curve of this kind, and so it seems hopeless to reach a dependable mathematical solution because of these disturbing fundamental differences.

There is still one other method of analysis which possesses some virtue in that it is not sensitive to fixed periodicity. It is based upon a relatively simple principle that when data are treated in a certain way the variations having the longer periods are accentuated. Furthermore, it is not dependent upon the wave form being sinusoidal. The indications are qualitative rather than quantitative and as its application seems to be limited to the extent of merely detecting the presence of the fundamentals, we are little concerned about the minor variations and whether their effect is additive or not.

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The President's Message

The National Society of Professional Engineers, like all democratic institutions in our enlightened United States of America, is about to undergo its periodic change of elected executives. At such a time retiring officers are privileged to indulge in retrospect, incoming officers make plans for future action and progress, and both groups hold counsel together in order that there be no interruption in the smooth continued operation of the organization. In this final message, before the reins are relinquished to a worthy successor, the most pleasant retrospects are the thoughts of fine support and loyal cooperation throughout the Society.

It is with a feeling of profound gratitude, that this opportunity is taken to express, on behalf of your 1941 Panel of Officers and Directors, a sincere appreciation for the work of those in the ranks. It has been an interesting and memorable year for the Professional Engineer and evidences of the value of properly organized effort by all branches of engineering have been felt as never before. It was inspiring to be trusted with the executive duties of the Society but, if anything, it is more inspiring to be able to remember the unselfish cooperative effort and support by all members which enabled the carrying forward of our important program.

Our earnest endeavor has been to adhere closely to the principles established by the founders of the Society while at the same time guiding our activities and destinies to meet the rapidly changing conditions of these troubled days. As an evidence of successful progress we point with pride to increased membership throughout the organization, an immediately prospective increase in the number of State Societies, a rebirth of several dormant constituent bodies, several new States brought into the registration fold, attainment of a more satisfactory financial status, improved relations and cooperation with Technical Engineering bodies, closer and more effective cooperation with Registration Boards, increased contact and work with governmental departments and a general increase in the scope and services of the N.S.P.E. as well as its component organizations.

On every hand we are confronted with evidences that the Society is becoming more widely recognized as the representative of the Professional Engineers as a whole. For years our position in this phase of Professional Engineering has been challenged, but the acceptance of such challenges has been the source of our growth and increasing strength. At no time in our history have we had more serious challenges than during the past year and never before have they been met with a more formidable and effective united front. Attempts of people outside the profession to force the Professional Engineer into Unprofessional Organizations have crystallized and activated the movement to keep the Engineer in the Professional ranks. It is inevitable now, that the Engineer is to organize as a professional man and is to be recognized by the public along with the Doctor and the Lawyer. This great goal has never before been as closely within reach if we pull together.

It is a strategic time now for the Engineer to increase his interest in Public and Civic affairs. Doctors and Lawyers are widely represented among the holders of public offices both appointive and elective and this year has seen an increase in the number of Professional Engineers in such offices. On Professional Engineering rosters may be seen an encouraging number of Mayors and Councilmen, legislators both State and National, and Governors and other State Officials. Engineers in increasing numbers are heading Chamber of Commerce and other civic movements. With its increasing momentum, this phase of the activities of the Professional Engineer will increase his value to the body politic and will increase the stature of his importance as a citizen. Such individual forces combined on the long end of a lever such as the N.S.P.E. can have untold benefits to the Professional Engineer as well as the citizenry in general.

To our worthy successors in office we extend our best wishes for a most successful year and humbly offer our continued services in the ranks to carry forward our great aims. We bespeak for them the continued and increasing support of our entire membership with the knowledge that a larger and more powerful N.S.P.E. will return manifold advantages and blessings both to the individual member and the public whom we serve. With the fine memories of the comaraderie brought by cooperative support and effort, we are reluctant to come to the end of our term of office but feel pleasure in knowing that the new officers and Directors have an interesting and fruitful year ahead of them.

As a Captain in the Air Corps, serving with the U. S. Army in far, remote, Newfoundland, your President has come to value more and more the part of the Professional Engineer in our great defense effort. The Engineer is undoubtedly a key man on whom great responsibilities are placed and in whom great confidence and trust is reposed. As in great times of crisis before, he is performing an unselfish service, which if properly recognized and organized will gain for the Professional Engineer a place in the public favor, never before attained. We are depending on the Professional Engineers more than on any other group to "Keep 'Em Flying."

Merry Christmas and a Happy New Year to all from the suburbs of Santa Claus' home.

CORRECTION—PRESIDENT'S MESSAGE—SEPT.-OCT. ISSUE

6th line, second paragraph should read: "Thus the epigram, 'Every man is a debtor to his Profession' came into our literature."

Resume Of The Work Of The Maryland State Board Of Registration For Professional Engineers And Land Surveyors

Reprinted from "The Baltimore Engineer" the publication of the Engineer's Club of Baltimore, Maryland.

A Statement by the Board

THE State Board of Registration for Professional Engineers and Land Surveyors was appointed by Governor O'Connor in the latter part of August, 1939, and after the necessary attestations and arrangements, was organized on September 18, 1939. The Board consists of A. G. Christie, Chairman; S. T. Powell, Vice-Chairman; J. R. Baker, Secretary; V. D. Cockey; and F. O. Schnure.

Board procedure, application forms, registration certificates, seals, accounting and purchasing methods, records, and interpretations were developed and approved secured from State officials. Many questions were referred to Attorney General Walsh, and the Board has received most cordial cooperation and assistance from his office. Officials of registration boards in other states and the National Council of State Boards of Engineering Examiners were consulted. Announcements of the plans of the Board were inserted in a list of newspapers that were specified by State officials, and were also distributed to the engineering societies having sections in Maryland. Much interest was evinced during this preliminary period by many who looked forward to being registered by Christmas, and in fact, applications in letter form were forwarded both before the Board had been appointed and before any procedure had been established.

Applications in accordance with the provisions of the law began to be received in the latter part of November 1939, and with them funds became available for the use of the Board. Some additional time elapsed before the complete procedure for the issuance of certificates of registration could be adopted. According to the Act, the first registration certificates had to be issued to the members of the Board and this was done on February 21, 1940.

In the light of later events, applications were received during the first few months at a very slow rate, and were not at all in proportion to the many requests for forms that were received during the initial weeks of the Board's existence. The small number of applications filed during these early months was, however, an advantage in that the Board was able to crystallize its ideas about the objective standards written in the Registration Act under less pressure and interruption than if the later deluge of applications had occurred at the start. By May 15, 1940 about 450 applications had been filed, of which about 300 had been given final consideration. From then until the termination on May 31, 1940 of availability of the "grandfather" paragraph, a veritable flood of applications poured in, about 1200 being filed during these two weeks.

The term of the Secretary, J. R. Baker, expired on June 1, 1940. In accordance with the terms of the Act, Governor O'Connor reappointed Mr. Baker to the Board, on which he is continuing as Secretary. The Act infers that the Board shall become a member of the National Council of State Boards of Examining Engineers, which membership was secured. Messrs. V. D. Cockey and F. O. Schnure represented the Board at the meeting of the National Council at Charleston, S. C. on October 28 to 31, 1940.

Naturally, applications of well-known engineers and of those holding certificates of qualification from the National Bureau of Engineering Registration were handled expeditiously by the Board. Applicants whose competency and responsibilities are unknown to the Board must be investigated. Replies from references are sometimes slow in arriving. Because the greater portion of the applications have been under the "grandfather" paragraph, the Board must be guided largely by the statements of references. If these are indefinite, incomplete, or indecisive, the Board must seek other sources of information, and delay ensues. All information given to the Board in regard to applicants is strictly confidential. The work of the Board would be expedited if references would give a specific statement of their knowledge of the applicant's work and capabilities, without which a glowing appraisal of his competency and professional attitude is unsubstantiated.

Another cause of delay was the failure of the applicant to set forth on his application in a professional manner his experience and responsibility. Copies of the Act establishing registration of professional engineers and land surveyors accompanied application forms given out or mailed. Each applicant was assumed to have acquainted himself with the Act and to have determined individually whether or not he was qualified for registration; it was further assumed that anyone of professional caliber appreciates the necessity of, and has the ability for, describing his professional attributes in a way that will convey a definite picture to the Board so that it will be enabled to make the determinations and to form correctly the conclusions required by the Registration Act. Analysis of several hundred applications shows these assumptions to be incorrect in a great many instances. Not only have many applicants failed to provide specific information of experience and responsibility and to distinguish the two aspects of their application when applying for double registration as a professional engineer and land surveyor, but they have also misinterpreted so direct a matter as the fee provisions and the time stipulation in the "grandfather" paragraph.

The Act defines the qualifications of a professional engineer and of a land surveyor, and sets forth quantitatively the minimum amounts of training and experience deemed necessary to fit a person for either of these callings. The Act states that all applicants shall be compelled to submit evidence of qualifications, and one of the evidentiary requirements reiterated in the Act is that the applicant has performed "work of a character satisfactory to the Board." There is nothing expressed or implied anywhere in the Act that anyone should be relieved of the necessity of submitting evidence that his qualifications meet those stipulated in the Act, or that anyone is to be registered unless he is qualified under all of the requirements of the Act. Yet instances have arisen that registration is expected merely on the basis of the statement of the applicant that he considers himself to be a professional engineer or land surveyor, and objection has been made that the submission of evidence of the character of work performed would be tantamount to an examination contrary to the provisions of the "grandfather" paragraph.

The Act contains three provisions which frequently require detailed investigation, particularly because in most cases the statements of experience by the applicants are not specific and the replies of references are confused

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Illinois Professional Registration Act Becomes Law

Milestone Is Reached in Registration Progress

By "THE ILLINOIS ENGINEER"

On July 24, Edward J. Hughes, Secretary of State, wrote on House Bill 279 the following certificate:

"This bill having been presented to the governor on July 11, 1941, after the adjournment of the General Assembly and he having failed to file it in my office, with his objections, within ten days (Sundays excepted) after such date, it has thereby become a law.

"Witness my hand this 24th day of July, A. D. 1941."

The enactment of this act into law culminates a long period of activities on the part of professional engineers in Illinois to secure for the citizens of the state the same protection that is now enjoyed by more than 90 per cent of the population of the country.

Two other states, Missouri and Delaware, have this year joined those having some form of professional engineering license. The records indicate that the only states not now having professional engineers license laws are Massachusetts, New Hampshire, North Dakota, and Montana.

An important feature of the new Illinois law to be noted by professional engineers is that its terms do not go into effect until August 1, 1943. This section was added to the bill at the last moment of its legislative course in order to allow an appropriation for its enforcement to be made at the next General Assembly. It was not feasible to make the bill effective in 1941 because no appropriation had been provided for it in the legislative budget.

Another important feature to be noted is that it is possible to secure registration under Section 12 without examination for a period of one year after August 1, 1943. This section is generally known as the "grandfather's clause."

Although the terms of the bill as originally presented to the Legislature were published in the January, 1941, issue of the Illinois Engineer, certain amendments have so changed some of the characteristics of the bill as to make its details of special interest to members of the profession. For that reason the certified copy of the act as passed by the Legislature is printed in full as follows:

THE ACT

"An Act to Regulate the practice of professional engineering.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Registration Required

Section 1. In order to safeguard life, health, and property, any person practicing or offering to practice professional engineering is required to submit evidence that he is qualified so to practice and to be registered as hereinafter provided; and it is unlawful for any person not so registered, to practice or offer to practice professional engineering in this State, or to use in connection with his name or otherwise assume, use, or advertise any title or description implying that he is a Registered Professional Engineer.

Definitions

Section 2. For the purposes of this Act:

"Professional engineer" means a person who is qualified by reason of his knowledge of mathematics, the physical sciences and the principles of engineering, acquired by professional education or practical experience, to engage in the practice of professional engineering as hereinafter defined.

"Registered Professional Engineer" means a professional engineer registered under the provisions of this Act.

"Professional engineering" means any professional service such as consultation, investigation, evaluation, planning, design, or supervision of construction, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works, or projects, wherein the public welfare or the safeguarding of life, health or property is concerned or involved, when such professional service requires the application of engineering principles and data.

"Department" means the Department of Registration and Education.

"Director" means the Director of the Department of Registration and Education.

"Committee" means the Examining Committee provided for by this Act.

"Public employment" means engagement in the design or execution of public projects as an employee of the State or of a political subdivision thereof or of a municipality therein.

Powers of Department

Section 3. The Department shall exercise, subject to the provisions of this Act, the following functions, powers and duties:

Examination

(a) Conduct examinations to ascertain the qualifications and fitness of applicants for certificates of registration as professional engineers, and pass upon the qualifications of applicants for reciprocal licenses, certificates and authorities;

(b) Prescribe rules and regulations for a method of examination of applicants;

Educational institutions

(c) Prescribe rules and regulations defining what shall constitute a school, college or university, or department of a university, or other institution, reputable and in good standing, and to determine whether or not a school, college or university, or department of a university, or other institution is reputable and in good standing by reference to a compliance with such rules and regulations, and to terminate the approval of such school, college or university, or department of a university, or other institution as reputable and in good standing for non-compliance with such rules and regulations; provided that no school, college or university, or department of a university, or other institution that refuses admittance to applicants, solely on account of race, color or creed shall be considered reputable and in good standing;

Preliminary education

(d) Establish a standard of preliminary education deemed requisite to admission to a school, college or university, and to require satisfactory proof of the enforcement of such standard by said schools, colleges and universities;

Revoke certificate

(e) Conduct hearings on proceedings to refuse to issue, to suspend, revoke or refuse renewal of licenses, certificates or authorities of persons applying for registration or registered under the provisions of this Act and to refuse to issue, revoke or refuse to renew such licenses or certificates or authorities;

N.C.S.B.E.E. Creates Examining Board

(f) Maintain membership in and appoint delegates to the National Council of State Boards of Engineering Examiners;

(g) Formulate rules and regulations as may be required to administer this Act.

None of the foregoing functions, powers or duties enumerated shall be exercised by the Department except upon the action and report in writing of the Examining Committee which shall be composed of persons designated by the Director to take such action and to make such report for the profession involved herein.

The action or report in writing of the majority of the Committee shall be sufficient authority upon which the Director may act. Whenever the Director is satisfied that substantial justice has not been done in examination, or hearing he may order a reexamination or a rehearing by the same Committee or by a Special Committee consisting of five professional engineers, designated by the Director, each of whom shall be a professional engineer of recognized standing and shall have the qualifications required by Section 4.

The Board

The Examining Committee shall consist of nine professional engineers, designated by the Director, each of whom shall be a professional engineer of recognized standing and shall have the qualifications required by Section 4. The first members of the Committee shall be appointed within ninety days after the passage of this Act, to serve for the following terms; three members for one year, three members for two years, three members for three years, from the date of their appointment, and until their successors are duly appointed and qualified. On the expiration of the term of any member, the Director shall appoint for a term of three years a Registered Professional Engineer, having the qualifications required by Section 4 to take the place of the member whose term on said Committee has expired, who shall hold office until the expiration of the term for which he is appointed and until his successor has been duly appointed and qualified.

In making the designation of persons to act, the Director shall give due consideration to recommendations by members of the profession and by organizations therein.

Examiners qualifications

Section 4. No person is qualified to be a member of the Committee unless: (a) he is a citizen of the United States; (b) he is a resident of this State; (c) he has been engaged in the practice of the profession of engineering for at least twelve years; (d) he has been in charge of engineering work for at least five years.

Teaching

For the purposes of this Section, any period in which a person has been in charge of engineering teaching may be considered as time in which he was in charge of engineering work.

Records

Section 5. The records of the Department shall be prima facie evidence of the proceedings of the Department set forth therein, and a transcript thereof duly certified by the Superintendent of Registration shall be admissible in evidence with the same force and effect as if the original were produced.

Roster

Section 6. A roster showing the names and places of business of all professional engineers registered under this Act shall be published by the Department during the month of August of each year. Copies of this roster shall be mailed to each person so registered, a copy placed on file with the Secretary of State, and copies furnished upon request to other persons.

Qualifications for registration

Section 7. A person is qualified to receive a certificate of registration who:

(a) Is of good moral character and temperate habits; and

(b) Successfully passes a written, or written and oral, examination, designed to show knowledge and skill approximating that attained through graduation from an approved four-year engineering curriculum; and has had eight years or more of experience in engineering work of a character satisfactory to the Committee and indicating that the applicant is competent to practice professional engineering; or

College graduates

(c) Has graduated from an engineering curriculum of four years or more in a school or college, which curriculum, school or college has been approved as of satisfactory standing by the Department; and has had an additional four years or more of experience in engineering work of a character satisfactory to the Committee (in counting years of experience, the Committee in its discretion may give credit, not in excess of one year for satisfactory graduate study in engineering), and indicating that the applicant is competent to practice professional engineering; or

Years of practice

(d) Has had twelve years or more of practice in professional engineering work of a character satisfactory to the Committee and indicating that the applicant is qualified to design or supervise construction of engineering works, provided such applicant is not less than thirty-five years of age.

In considering the qualifications of applicants any period in which the applicant was engaged in engineering teaching may be considered as time in which he was engaged in engineering work.

Undergraduate study

The satisfactory completion of each year of an approved curriculum in engineering in a school or college approved as of satisfactory standing by the Department, without graduation, shall be considered as equivalent to a year of experience in paragraph (b) of this section. Graduation from a curriculum other than engineering of a college or a university of recognized standing, may be considered as equivalent to two years of experience in para-

graph (b) of this section; provided, no applicant shall receive credit for more than four years of experience in paragraph (b) of this section for undergraduate educational qualifications.

Reciprocity through N.C.S.B.E.E.

When the applicant holds a certificate of qualification issued to him by any national council of engineering examiners or any national bureau of engineering registration whose requirements to qualify for such certificate are satisfactory to the Committee as meeting the minimum requirements of paragraph (b) of this section, the Committee at its discretion may accept such certificate as satisfactory evidence that the requirements of paragraph (b) have been met by the applicant without requiring a written or oral examination.

Person not practicing

Any person having the necessary qualifications prescribed in this Act, entitling him to registration is eligible for such registration although he is not practicing professional engineering at the time of making his application.

Application form

Section 8. Applications for registration shall (a) be on forms prescribed and furnished by the Department, (b) contain statements made under oath, showing the applicant's education and a detailed summary of his technical work, and (c) contain not less than five references, of whom three or more shall be professional engineers having personal knowledge of his professional engineering experience. The fee for registration as provided for in Section 27 of this Act shall accompany the application.

Examination: time, place, and scope

Section 9. When oral or written examinations are required they shall be held at such times and places as the Committee shall determine.

The scope of the examination and the method of procedure in connection therewith shall be prescribed by the Committee with special reference to the applicant's ability to design and supervise professional engineering works so as to insure the safety of life, health, and property. In the discretion of the Committee an examinee may be permitted to select from groups of questions pertinent to several branches of engineering the group which, in the examinee's opinion, most nearly covers his professional engineering experience.

Must issue certificate

Section 10. The Department shall issue a certificate of registration upon payment of the registration fee, as provided for in this Act, to any applicant who, in the opinion of the Committee, has satisfactorily met all of the requirements of this Act. The certificate of registration shall authorize the practice of "Professional Engineering," show the full name of the registrant, have a serial number, and be signed by the Director.

The issuance of a certificate of registration by the Department shall be prima facie evidence that the person named therein is entitled to all of the rights and privileges of a registered professional engineer, while the said certificate remains unsuspended, unrevoked or unexpired.

Seal required

Each registrant hereunder shall, upon registration, obtain a seal of the design authorized by the Department, bearing the registrant's name and the legend, "Registered Professional Engineer of Illinois." All plans, specifications, and reports rendered as professional engineering services by a Registered Professional Engineer shall be stamped with such seal, during the life of the registrant's certificate, but it is unlawful for anyone to stamp or seal any documents with such a seal after the certificate of the registrant named thereon has expired or during any period in which his certificate is suspended or revoked.

Annual renewal

Section 11. Each Registered Professional Engineer who continues in practice shall, annually, on or before the first day of July, renew his certificate of registration and pay the required renewal fee. Every certificate of registration which has not been renewed on or before the first day of July or during the month of July shall expire on the first day of August in that year. A Registered Professional Engineer whose certificate of registration has expired may have his certificate restored only upon payment of all lapsed renewal fees and also upon payment of the required restoration fee, provided, however, not more than five (5) years have elapsed since the date of expiration.

Military service

Any Registered Professional Engineer who has permitted his certificate to expire for more than five (5) years, may have his certificate restored by making application to the Department and filing proof acceptable to the Department of his fitness to have his certificate of registration restored and by paying the required restoration fee. However, any registered professional engineer whose certificate of registration has expired while he has been engaged (1) in federal service on active duty with the Army of the United States, the United States Navy, the Marine Corps, the Coast Guard or the State Militia called into the service or training of the United States of America, or (2) in training or education under the supervision of the United States preliminary to induction into the military service, may have his certificate of registration restored without paying any lapsed renewal fees or restoration fee or passing any examination, if within one year after termination of such services, training or education other than by dishonorable discharge he furnishes the Department with an affidavit to the effect that he has been so engaged and that his service, training or education has been so terminated.

Notification of expiration

It is the duty of the Director to notify every person registered under this Act, of the date of expiration of his certificate and the amount of the fee required for its renewal for one year, such notice to be mailed to the place of business last theretofore specified by the registrant in his last notification to the Department, at least one month in advance of the expiration of the certificate.

"Grandfather Clause"

Section 12. At any time within one year after this Act becomes effective, upon application therefor, and the payment of the registration fee as provided for in Section 27 of this Act, the Department shall issue a certificate of registration, without oral or written examination, to any professional engineer who shall submit evidence under

oath satisfactory to the Committee, that he is of good character, has been a resident of the State of Illinois for at least one year immediately preceding the date of his application, and was practicing professional engineering at the time this Act became effective, and has performed work of a character satisfactory to the Committee.

Only registrant to do public work

Section 13. After August 1, 1944, it shall be unlawful for any person to prepare any plans, specifications or estimates for any public work involving professional engineering, for the State of any of its political subdivisions, or any municipality, or to exercise the direct supervision of the construction of any public work, unless such person is a registered professional engineer; provided, that nothing in this Section shall prohibit engaging in any such activity when the contemplated expenditure for the project does not exceed two thousand dollars ($2,000).

Structural Engineer and Architecture protected

Section 14. No Professional Engineer shall practice either Structural Engineering as defined in the "Illinois Structural Engineering Act" or Architecture as defined in the "Illinois Architectural Act" unless he is registered pursuant to the provisions of either the "Illinois Structural Engineering Act" or the "Illinois Architectural Act."

Reciprocity

Section 15. The Department may, upon application therefor and upon the recommendation of the Committee and the payment of the fee as provided for in Section 27 of this Act, issue a certificate of registration to any professional engineer who holds an unexpired certificate of registration issued to him by proper authority of any State or Territory or Possession of the United States, or of any country, provided that (a) the requirements for the registration of professional engineers under which said certificate of registration was issued do not conflict with the provisions of this Act (b) the requirements for the registration of professional engineers under which said certificate of registration was issued are substantially equal to those specified in Section 7 of this Act, and (c) the particular State or Territory or Possession of the United States, or country extends similar privileges to the persons registered under this Act.

Structural Engineer gets certificate

Section 16. At any time within one year after this Act becomes effective the Department shall, upon application therefor, and the payment of the fee as provided for in Section 27 of this Act, issue a certificate of registration to any applicant holding an unexpired certificate of registration, as a Registered Structural Engineer issued by the State of Illinois.

After this Act has been in effect one year, the Department shall issue certificates of registration only as provided for in Section 7 or Section 15 hereof.

Revocation of certificate

Section 17. The Department may either refuse to issue, or may suspend or revoke any certificates of registration for any one, or any combination, of the following causes:

(a) The practice of any fraud or deceit in obtaining or attempting to obtain a certificate of registration;

(b) Any gross negligence, incompetency or misconduct in the practice of professional engineerng as a registered professional engineer;

(c) Conviction of a felony;

(d) Being declared insane by a court of competent jurisdiction and not thereafter having been lawfully declared sane;

(e) Failure to comply with any of the provisions of this act or any of the rules and regulations of the Department pertaining thereto.

Department must hold hearing

Section 18. The Department may upon its own motion and shall upon the sworn complaint in writing of any person setting forth facts which, if proved, would constitute grounds for refusal, suspension or revocation, of a certificate as hereinabove set forth, investigate the actions of any person holding or claiming to hold a certificate.

The Department shall, before refusing to issue, suspending or revoking any certificate, at least ten (10) days prior to the date set for the hearing, notify in writing the applicant or holder of such certificate of any charges made and shall afford such accused person an opportunity to be heard in person or by counsel in reference thereto. Such written notice may be served by delivery of the same personally to the accused person, or by mailing the same by registered mail to the place of business last theretofore specified by the accused person in his last notification to the Department. At the time and place fixed in the notice, the Committee shall proceed to hearing of the charges and both the accused person and the complainant shall be accorded ample opportunity to present in person or by counsel, such statements, testimony, evidence and argument as may be pertinent to the charges or to any defense thereto. The Committee may continue such hearing from time to time. If the Committee is not sitting at the time and place to which the hearing has been continued, the Department may continue such hearing for a period not to exceed thirty (30) days.

Subpoenas and oaths

Section 19. The Department has power to subpoena and bring before it any person in this State and to take testimony, either orally or by deposition, or both, with the same fees and mileage and in the same manner as prescribed by law in judicial procedure in civil cases in courts of this State.

The Director, Assistant Director of the Department and any member of the Committee shall each have power to administer oaths to witnesses at any hearing which the Department is authorized by law to conduct.

Court's jurisdiction

Section 20. Any circuit or superior court, or any judge thereof, upon the application of the accused person or complainant or of the Department, may, by order duly entered, require the attendance of witnesses and the production of relevant books and papers before the Department in any hearing relative to the application for or refusal, suspension or revocation of a certificate, and

the court or judge may compel obedience to its or his order by proceedings for contempt.

Written record

Section 21. The Department, at its expense, shall provide a stenographer to take down the testimony and preserve a record of all proceedings at the hearing of any case wherein a certificate is refused, revoked or suspended. The notice of hearing, complaint and all other documents in the nature of pleadings and written motions filed in the proceedings, the transcript of testimony, the report of the Committee and the orders of the Department shall be the record of such proceedings. The Department shall furnish a transcript of such record to any person interested in such hearing upon payment therefor of twenty-five cents per one hundred words for each original transcript and eight cents per hundred words for each carbon thereof ordered with the original: Provided, the charge for any part of such transcript ordered and paid for previous to the writing of the original record thereof shall be eight cents per hundred words.

Written report

Section 22. The Committee shall present to the Director its written report of its findings and recommendations. A copy of such report shall be served upon the accused person, either personally or by registered mail, as provided in this Act for the service of the citation. Within twenty (20) days after such serivce, said accused person may present to the Department his motion in writing for a rehearing, which written motion shall specify the particular grounds therefor. If the accused person shall order and pay for a transcript of the record as provided in this Act, the time elapsing thereafter and before such transcript is ready for delivery to him shall not be counted as part of such twenty days.

At the expiration of the time specified for filing a motion for a rehearing, the Director shall have the right to take the action recommended by the Committee. Upon the suspension or revocation of his certificate of registration, a registrant shall be required to surrender his certificate of registration to the Department, and upon his failure or refusal so to do, the Department shall have the right to seize the same.

Restoration of certificate

Section 23. At any time after the suspension or revocation of any certificate, the Department may restore it to the accused person without examination, upon the written recommendation of the Committee.

Legal review

Section 24. The circuit or superior court of the county wherein the accused person resides shall have power to review any order of revocation or suspension and all questions of law and fact thereon by writ of certiorari to the Department, provided, if the accused person is not a resident of this State and the venue is not otherwise fixed herein, such venue shall be in Sangamon County.

Such writ shall be issued by the clerk of the court upon praecipe and it shall be served at least ten days before the return day thereof. Service upon the Director or Assistant Director of the Department shall be service on the Department. Such suit shall be commenced within twenty days of the accused person's receipt of notice of the order of refusal, revocation or suspension.

The Department shall not be required to certify the record of its proceedings unless the accused person shall first pay to it the sum of five cents per one hundred words of such record. Exhibits shall be certified without cost.

No Department order of refusal, suspension or revocation shall be set aside or vacated on any ground not specified in the written motion for rehearing provided for in this Act.

Prima facie proof

Section 25. An order of refusal to issue, revocation or suspension, or a certified copy thereof, over the seal of the Department and purporting to be signed by the Director shall be prima facie proof that:

(a) Such signature is the genuine signature of the Director;

(b) Such Director is duly appointed and qualified;

(c) The Committee and the members thereof are qualified to act.

Such order of refusal, revocation or suspension shall be conclusive proof that all precedent and concurrent acts of Department officers and of the Committee necessary to the validity of such order were pursuant to authority conferred by the Director.

Appeals

Section 26. Appeals from all final orders and judgments entered by a circuit or superior court in review of an order of the Department may be taken directly to the Supreme Court by either party to the action within sixty (60) days after service of a copy of the order or judgment of the circuit or superior court, and shall be governed by the rules applying to other civil cases appealed to the Supreme Court, except that formal pleadings shall not be required.

The pendency of an appeal or writ of certiorari shall not of itself stay or suspend the operation of an order of refusal, revocation or suspension; but during the pendency of such suit or appeal, the circuit or superior court, or the Supreme Court, as the case may be, in its discretion, may stay the operation of such order in whole or in part upon such terms and conditions as the court may prescribe. No such stay shall be granted by the court otherwise than upon ten days' notice to the Department and after a hearing.

Fees

Section 27. The fee to be paid by an applicant upon filing his application for registration when oral or written examinations are required is twenty dollars ($20.00). An applicant failing to pass an examination may apply for reexamination at the expiration of six (6) months and will be reexamined without payment of additional fee. The fee to be paid for subsequent examinations to determine his fitness to receive a certificate of registration is ten dollars ($10.00).

The fee to be paid by an applicant upon filing his application for registration under Section 12 of this Act shall be ten dollars ($10.00).

The fee to be paid by an applicant upon filing his application for registration under Section 15 of this Act shall be ten dollars ($10.00).

(Continued on Page 20)

Court Opinion in Applicant's Appeal From Board's Refusal to Register

In re. Appeal of Peter Maurice Steel from the Action of the State Registration Board for Professional Engineers in Refusing to Issue a Certificate of Registration as a Professional Engineer.

In the Court of Common Pleas of Dauphin County

No. 510 Commonwealth Docket 1941

OPINION

BY THE COURT:

This matter is before us on appeal of Peter Maurice Steel from the action of the State Registration Board for Professional Engineers in refusing to register him as a professional engineer.

It appears from the record that the appellant registered as a professional engineer for the registration year of 1929 but failed to register thereafter, until 1938, when he filed an application for such registration. After investigation by the board, and because of untruthfulness or falsity of certain statements in this application, particularly in relation to his answer to Question No. 13, under Engagement 7, registration was refused. In an interview before the board appellant admitted the information he had submitted concerning this question was untrue, whereupon he was informed by the board no further consideration would be given to his application unless he would submit a truthful one, inasmuch as the application was submitted under oath.

The appellant again, on May 2, 1940, filed a similar application, under oath, in which he stated as to question No. 13, engagement 7, that during the years 1934 to 1936 his services had been those of a designing engineer, whereas the board contends he had been a designing draftsman. This being considered a very substantial misrepresentation by the board, it again refused to register him unless he would submit an application without any misrepresentation of any material facts, notifying him on September 5, 1940, that "for the reason that the evidence presented does not warrant the board granting a certificate of registration as a professional engineer" (Exhibit No. 2). Thereafter appellant was granted a hearing before the board during which he admitted the misrepresentation contained in his answers under question No. 13, engagement 7, of the application, and also admitted having prepared certain private engineer's plans and having practiced several years without being properly registered; and again appellant was informed by the board that they would not consider his application for registration until such time as he filed a truthful one. Instead of filing a truthful application as suggested by the board, appellant filed the appeal which we now have under consideration.

DISCUSSION

Inasmuch as appellant admitted, in his testimony taken before the Court, that his answer to question No. 13, engagement 7, was untrue, and that he was a designing draftsman rather than a designing engineer, we think the action of the board in refusing to register him for this reason must be sustained. The appellant has the privilege of filing a new application containing truthful statements at any time. Appellant' counsel attempted to amend the application at the close of the hearing. We quote from the testimony, p. 52:

> "Mr. Moidy (for appellant): I don't suppose you would agree to this, but we would like to amend our application and change the words 'Designing Engineer' to 'Design Draftsman' at this time, because we feel that it was merely a misnomer and that the applicant was frank in admitting the mistake.
>
> "Mr. Barco (for the Commonwealth): Of course we could not agree to that because the position of the board has been from the beginning that whenever he presented an application which was truthful they would consider it and dispose of it at that time; and we could not agree to anything of that kind, because I don't have any authority to do something of that sort now. I would like to dispose of the case under the facts that exist in this case, and of course it does not bind Mr. Steel against filing any further application or anything in the future."

We feel that any amendments to appellant's application must be filed with the board, and not with the court; however the better course would be to file with the board a new application truthfully setting forth appellant's qualifications.

Appellant complains the board's letter of September 5, 1940, notifying him of its refusal to register him, did not specifically state the reasons for its refusal, as is required under section 5(c) of the Act of 1927 P. L. 820. This section provides:

> "Provided, That upon the filing of an application, the board may investigate the allegations therein contained and if, upon investigation, it believes that the applicant is not competent to be placed in responsible charge of engineering work, or of surveying work, as the case may be, it shall decline to register the applicant, stating its reasons. * * *"

The board's letter above referred to, stating "for the reason that the evidence presented does not warrant the board granting a certificate of registration as a professional engineer," we find to be indefinite. In the testimony the reasons for refusing to register the appellant appear to be that under Question 13, engagement 7, the applicant stated that from 1934 to 1936 he was employed as a design engineer for Allegheny County in planning design; and that the applicant had signed two plans using his old registration number when in fact he was not registered at the time. We are of the opinion the board's notification to appellant refusing to register him should have stated specific reasons for its refusal, and not merely the general statement above quoted.

While the failure of the board to adequately express its reasons might be sufficient to remit the record to the board for that purpose, since the reasons have fully appeared in the testimony, and since the board has left the way open for a new application to be filed, we will not remit the case.

(Continued on Page 20)

OHIO

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63 SOUTH HIGH STREET
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Secretary ..Norbert R. Patton, 323 Plum Street, Cincinnati

Cleveland Society of Professional Engineers
Cuyahoga County
President ..John O. McWilliams, 1900 Standard Building, Cleveland
Secretary ..John J. Lucas, 606 Auditorium Garage Bldg., Cleveland

Dayton Society of Professional Engineers

Montgomery County

President ..Raymond R. Bowser, 141 Bruen Street, Dayton

Secretary ..Elmer F. Stansberry, 425 Kolping Avenue, Dayton

East Ohio Society of Professional Engineers and Surveyors

Harrison, Belmont and Monroe Counties

President ..Dwight M. Ryan, 128 N. Fourth Street, Martins Ferry

Secretary ..Richard E. Tracy, P. O. Box 51, St. Clairsville

Franklin County Chapter

President ..Fred E. Swineford, 60 E. Lane Avenue, Columbus

Secretary ..Joseph F. Barbee, 91 W. Lakeview Avenue, Columbus

Gallia-Jackson-Lawrence Chapter

Gallia, Jackson and Lawrence Counties

President ..Walter E. Miller, Vaughn Street, Jackson

Secretary ..Thomas E. Morgan, Taylor Tractor Co., Jackson

Hocking Valley Chapter

Perry, Hocking, Athens, Vinton and Meigs Counties

President .....O. B. Stout, Middleport

Secretary ....George W. Clark, 225 Highland Ave., Athens

Jefferson County Society of Professional Engineers

Jefferson County

President ..Charles B. Cox, 518 N. River Ave., Toronto

Secretary ..Edgar W. Watson, Exchange Realty Bldg., Steubenville

Lake Erie Chapter

Erie, Huron and Lorain Counties

President ..P. H. Watkins, 2122 Columbus Avenue, Sandusky

Secretary ..K. G. Williams, 102 Perry St., Sandusky

Mahoning Valley Society of Professional Engineers

Trumbull, Mahoning and Columbiana Counties

President ..Grant M. Cook, 451 Francisca Avenue, Youngstown

Secretary ..T. M. Robinson, 328 Ferndale Avenue, Youngstown

Marion Chapter

Union, Marion, Morrow and Delaware Counties

President ..George J. Flatman, 149 Spencer Street, Marion

Secretary ..Fred L. White, 715 Woodrow Avenue, Marion

Maumee Valley Chapter

Williams, Fulton, Defiance, Henry, Paulding Putnam, Van Wert and Allen Counties

President ..C. B. Harbison, 1867 W. High Street, Lima

Secretary ..C. L. Bullock, 718 N. Metcalf Street, Lima

Midwestern Chapter

Mercer, Darke, Auglaize, Shelby Logan and Miami Counties

President ..E. J. Salsinger, 407 S. Ohio Ave., Sidney

Secretary ..O. W. Gruebmeyer, 801 Chestnut Street, Sidney

Muskingum Valley Chapter

Morgan, Noble and Washington Counties

President ..G. M. Gerhart, 308 Washington Street, Marietta

Secretary ....Robert E. Williams, 322 Fourth Street, Marietta

North Central Chapter

Crawford, Richland, Ashland and Wayne Counties

President ....Walter E. Rusk, Court House, Mansfield

Secretary ..Stanley M. Horn, Court House, Mansfield

Northeast Chapter

Lake, Geauga and Ashtabula Counties

President ..W. R. Persons, 23 Jefferson St., Painesville

Secretary ....A. B. Wilson, Court House, Painesville

Ohio Northern University District Chapter

Hancock, Hardin and Wyandot Counties

President ..Adren V. Foltz, 110 N. Blanchard Street, Findlay

Secretary ..J. S. Sawvel, 120 N. Main St., Findlay

Portsmouth Chapter

Scioto County

President ....Gilbert R. Fuller, 1209 Fourth Street, Portsmouth

Secretary ..Omar J. Robinson, 5569 Cherry Street, Sciotoville

Sandusky-Ottawa-Seneca Society of Professional Engineers

Sandusky, Ottawa and Seneca Counties

President ..Herman G. Kuhn, 69 Sycamore St., Tiffin

Secretary .....Gerald W. Fling, Court House, Tiffin

Southern Ohio Chapter

Madison, Pickaway, Fayette, Clinton, Ross, Pike, Highland, Clermont, Brown and Adams Counties

President ..Geo. F. Driscoll, Southern Ohio Quarries, Chillicothe

Secretary ..H. L. Krauser, 137 E. Fifth St., Chillicothe

Springfield District Chapter

Greene, Clark and Champaign Counties

President ..Ross P. Thomas, 739 Woodlawn Avenue, Springfield

Secretary ....H. E. Lorton, City Building, Springfield

Toledo Society of Professional Engineers

Lucas and Wood Counties

President ..Delos M. Palmer, University of Toledo, Toledo

Secretary ....C. E. Pettis, 725 Nicholas Bldg., Toledo

Tri-County Society of Professional Engineers and Surveyors

Preble, Warren and Butler Counties

President ..Edwin S. Banta, 9 Kenwood Drive, Middletown

Secretary ..Roy A. Pochel, City Building, Middletown

Zanesville Regional Society of Engineers and Surveyors

Guernsey, Coshocton and Muskingum Counties

President ....Gordon V. Lewis, 1028 Adair Avenue, Zanesville

Secretary .....Robert W. Painter, Ohio Power Co., Zanesville

PENNSYLVANIA

PENNSYLVANIA SOCIETY OF PROFESSIONAL ENGINEERS

PITTSBURGH CHAPTER

Officers for 1941

Name *Address*

President—John M. Rice, 2502 Grant Building, Pittsburgh, Pa.

Vice-President—Earl Dwight Covell, 1112 Bessemer Bldg., Pittsburgh, Pa.

Secretary—Benjamin H. Aires, 610 Maloney Bldg., Pittsburgh, Pa.

Treasurer—Raymond I. Lachman, 711 Hale Street, Pittsburgh, Pa.

State Director—J. J. Paine, 1430 North Euclid Ave., Pittsburgh, Pa.
Director-at-Large—David Camilli, 5125 West Penn Place, Pittsburgh, Pa.
Directors—E. L. Arnold, 7126 Mt. Vernon Street, Pittsburgh, Pa.; E. E. Appel, 508 Gulf Bldg., Pittsburgh, Pa.; F. Hughes Moyer, 4234 Parkman Avenue, Pittsburgh, Pa.; T. J. Mitchell, 1617 Falck Avenue, Pittsburgh, Pa.; John R. Shoffner, Ally. River Mining Co., Kittanning, Pa.; George W. Schusler, 324 Fourth Avenue, Pittsburgh, Pa.

Chairmen of Committee for 1941

Name *Address*

Ethics & Practice—Mose Smith, 3849 Beechwood Blvd., Pittsburgh, Pa.
Public Relations—Charles D. Palmer, 435 Sixth Ave., Pittsburgh, Pa.
Legislative—James S. Devlin, 4301 Andover Terrace, Pittsburgh, Pa.
Membership—Roswell Canfield, 308 North Negley Ave., Pittsburgh, Pa.
Employment—Earl Dwight Covell, 1112 Bessemer Bldg., Pittsburgh, Pa.
Attendance—
Publicity—
Publications—J. Clyde Taylor, 6446 Marchand Street, Pittsburgh, Pa.
Program—William H. R. Kreiling, 1717 Montpelier Ave., Dormont, Pa.
Audit—H. S. Ayres, 303 City County Bldg., Pittsburgh, Pa.

Designated meetings, when held *Third Thursday each month—PITTSBURGH HOTEL.*
Chapter's Annual meeting date *Third Thursday in December.*
Board of Direction meets Second Thursday of each month—PITTSBURGH HOTEL.

BENJAMIN H. AIRES,
Secretary.

PHILADELPHIA CHAPTER

Officers for 1941

Name *Address*

President—Lawrence Costello, 408 E. Wadsworth St., Phila., Pa.
Vice-President—Robert V. Hudson, 1115 Sanger St., Phila., Pa.
Secretary—Henry F. Bamberger, 817 W. Roosevelt Blvd., Phila., Pa.
Treasurer—Wilbert C. Cornell, 125 Long Lane, Upper Darby, Pa.
State Director—Milton H. Blez, 57 E. Penn Street, Phila., Pa.

Chairmen of Committee for 1941

Name *Address*

Ethics & Practice—G. Edmund Geyer, 6143 Oxford Street, Phila., Pa.
Public Relations—John R. Grandinetti, 5634 N. 19th Street, Phila., Pa.
Publicity—R. M. Fuller, 560 N. 16th Street, Phila., Pa.
Publication—Alfred A. Townsend, 718 Carpenter Lane, Phila., Pa.
Membership—Robert V. Hudson, 1115 Sanger Street, Phila., Pa.
Legislative—Samuel I. Sacks, 921 Widener Building, Phila., Pa.
Meetings—Milton H. Blez, 57 E. Penn Street, Phila., Pa.

Designated meetings, when held *First Thursday of every month at the Engineering Center of Philadelphia, 1317 Spruce Street. Dinner at 6:30. Meeting at 8* P.M.
Chapter's Annual meeting date *First Thursday of June.*

HENRY F. BAMBERGER,
Secretary.

ERIE CHAPTER

Officers for 1941

Name *Address*

President—Fred W. Talbot, 1673 West 11th Street, Erie, Pa.
First Vice-President—Karl A. Miller, 548 Baldwin Street, Meadville, Pa.
Second Vice-President—
Secretary—Hugh M. Nelson, 1731 Oxford Street, Erie, Pa.
Treasurer—Hugh M. Nelson, 1731 Oxford Street, Erie, Pa.
State Director—
Director-at-Large—Fred W. Talbot, 1673 West 11th Street, Erie, Pa.

Chairmen of Committee for 1941

Name *Address*

Ethics & Practice—William P. Johnson, 821 Commerce Bldg., Erie, Pa.
Public Relations—Clarence K. Pulling, City Hall, Erie, Pa.
Legislative—Clarence K. Pulling, City Hall, Erie, Pa.
Membership—J. S. Dunwoody, 729 Park Ave., South, Erie, Pa.
Attendance—J. S. Dunwoody, 729 Park Ave., South, Erie, Pa.
Publicity—A. K. Hubbard, 639 West 8th Street, Erie, Pa.
Publications—A. K. Hubbard, 639 West 8th Street, Erie, Pa.
Program—M. C. Goodspeed, General Electric Co., Erie, Pa.

Designated meetings, when held *Second Tuesday each month except July and Aug.*
Chapter's Annual meeting date *Second Tuesday of November.*

HUGH M. NELSON,
Secretary.

READING CHAPTER

Officers for 1941

Name *Address*

President—A. S. Wertz, 426 North Second Street, Reading, Pa.
First Vice-President—W. P. Saunier, 412 Washington Street, Reading, Pa.
Second Vice-President—W. S. Pugh, Mortimer Building, Pottsville, Pa.
Secretary—LeRoy F. Christman, 101 Endlich Avenue, Reading, Pa.
Treasurer—W. B. Ahrens, 622 Court Street, Reading, Pa.
State Director—W. N. Smith, University Club, Reading, Pa.
Director-at-Large—

Chairmen of Committee for 1941

Name *Address*

Administrative—A. S. Wertz, 426 N. Second Street, Reading, Pa.
Ethics & Practice—William P. Saunier, 412 Washington Street, Reading, Pa.
Public Relations—Earle M. Frankhouser, Berks County Trust Co., Reading, Pa.
Legislative—Fred. H. Dechant, 526 Franklin Street, Reading, Pa.
Membership—George A. Roos, 200 Mahantongo Street, Pottsville, Pa.

Publications—W. N. Smith, University Club, Reading, Pa.

Designated meetings, when held *Second Wednesday each month except July and Aug.*

Chapter's Annual meeting date *Second Wednesday in December.*

LeRoy F. Christman,
Secretary.

LEHIGH VALLEY CHAPTER

Officers for 1941

Name *Address*

President—V. W. Anchaitis, 1929 Ferry St., Easton, Pa.

First Vice-President—L. L. Fravillig, 1410 Lenox Ave., Bethlehem, Pa.

Second Vice-President—

Secretary—A. G. MacMillan, 311½ S. 15th St., Allentown, Pa.

Treasurer—C. T. Shock, 2129 Walnut St., Allentown, Pa.

State Director—Lynn Perry, 828 McCartney St., Easton, Pa.

Director-at-Large—

Chairmen of Committee for 1941

Name *Address*

Architect & Engineers—G. E. Pidcock, 2349 Allen St., Allentown, Pa.

Ethics & Practice—H. G. Payrow, 1431 Lenox Ave., Bethlehem, Pa.

Public Relations—J. A. Gish, Lehigh Portland Cement Co., Easton, Pa.

Legislative—Howard Roeder, 516 Second St., Catasauqua, Pa.

Membership—Ambrose R. West, 826 N. 13th St., Allentown, Pa.

Registration—Hale Sutherland, Lehigh University, Bethlehem, Pa.

Meetings—J. H. Morrow, Fuller Company, Catasaqua, Pa.

Publications—L. L. Fravillig, 1410 Lenox Ave., Bethlehem, Pa.

Entertainment—J. B. Gaffney, 124 Bridge St., Catasauqua, Pa.

Administrative—V. W. Anchaitis, 1929 Ferry St., Easton, Pa.

Auditing—Frank Nagy, 302 Hunsicker Bldg., Allentown, Pa.

New Chapter—Lynn Perry, 828 McCartney St., Easton, Pa.

Designated meetings, when held *First Friday of March, April, May and June; First Friday of Oct., Nov., and Dec.*

Chapter's Annual meeting date *Second Friday in January.*

Allen G. MacMillan,
Secretary.

Court Opinion - *Penna.*

(Continued from Page 16)

With reference to appellant's having signed two plans using his old registration number when he was not registered, it seems that he was under a misapprehension of the law; and that he believed he was exempted from registration for such time as his application was under consideration by the board. Section 10 of the said Act of 1927 provides:

"The following persons shall be exempted from registration under the provisions of this act, to wit:

"(a) A person who is a resident of and has an established place of business in this Commonwealth, who shall have filed with the board an application for a certificate of registration, and shall have paid the fee required by this act. Such exemption shall continue only for such time as the board requires for the consideration of the application for registration."

It appears from the testimony that while one of appellant's applications was pending before the board he signed two plans "as resident engineer," and testified: "according to the law I understood as long as I had my application in there for renewal that I could go ahead and participate as engineer, and Mr. Myers told me * * * I couldn't do that, and I said, 'I will not do it any more,' and I have not." (N. T. p. 17) We think, therefore, with appellant's explanation of this matter the objection of the board as to the signing of the plans should be dismissed.

ORDER

And now, July 21, 1941, the action of the State Registration Board in refusing to register appellant as a professional engineer for the reason of untruthfulness or falsity in his answer to question 13, engagement 7, of his application for registration, is affirmed, without prejudice to the applicant to file a new and truthful application. The appeal is dismissed. Costs to be paid by the appellant.

/s/ Frank B. Wickersham,
A. L. Judge

Illinois Act

(Continued from Page 15)

The fee to be paid by an applicant upon filing his application for registration under Section 16 of this Act shall be one dollar ($1.00).

The fee to be paid for the renewal of a certificate of registration is three dollars ($3.00).

The fee to be paid for the restoration of a certificate of registration which has expired for not more than five (5) years is five dollars ($5.00).

The fee to be paid for the restoration of a certificate of registration which has expired for more than five (5) years is fifteen dollars ($15.00).

The fee to be paid for the issuance of a duplicate certificate of registration is five dollars ($5.00).

Penalty

Section 28. Each of the following constitutes a misdemeanor punishable upon conviction by a fine of not less than one hundred dollars ($100.00), nor more than five hundred dollars ($500.00), or imprisonment in the county jail for a period of not exceeding three (3) months, or both:

(a) The practice, or offer to practice, professional engineering in this State without a certificate of registration as a professional engineer;

(b) The presenting, or attempting to use, as his own, the certificate of registration or the seal of another;

(c) The submitting of false or forged evidence of any kind to the Department in obtaining a certificate of registration;

(d) The false impersonation of any other registrant;

(e) The use or attempted use of an expired, suspended, or revoked certificate of registration.

(f) The violation of any of the provisions of this Act.

Exemptions

Section 29. This Act shall not be construed to prevent or affect:

(a) The practice of any other recognized profession or trade; or

Operators

(b) The activities essential to the operation and maintenance of machinery, equipment and structures or of mechanics in the performance of their established functions; or

Non-resident

(c) The practice of a person not a resident of and having no established place of business in this State, practicing or offering to practice herein professional engineering when such practice does not exceed in the aggregate more than thirty days in any calendar year; provided, such person is legally qualified by registration to practice professional engineering in his own state or country in which the requirements and qualifications for obtaining a certificate of registration are not lower than those specified in this Act; or

New resident

(d) The practice of a person who has, within the last preceding year, become a resident, practicing or offering to practice herein professional engineering, and who has filed with the Department an application for a certificate of registration and has paid the fee required by this Act; provided, such a person is legally qualified by registration to practice professional engineering in some other state or country in which the requirements and qualifications for obtaining a certificate of registration are not lower than those specified in this Act; and further provided, that such practice shall be permitted only for such a time as the Department requires for the consideration of the application for registration; or

Subordinate

(e) The work of an employee or a subordinate of a person holding a certificate of registration under this Act, or an employee of a person practicing lawfully under paragraphs (c) or (d) of this Section; provided such work is done under the direct responsibility, checking and supervision of a person holding a certificate of registration under this Act or a person practicing lawfully under paragraphs (c) or (d) of this Section; or

Federal employee

(f) The practice of officers and employees of the Government of the United States while engaged within this State in the practice of the profession of engineering, for said Government; or

Contractor

(g) The execution of work by a contractor as distinguished from the planning or design thereof or the supervision of the construction of such work as a foreman or superintendent; or

Private work

(h) Engineering service when such service is not for hire to the public and is not in connection with public employment; or

Manufacturer

(i) Engineering work and services as done by employees of a company engaged in manufacturing operations, or by employees of laboratory research affiliates of such a manufacturing company, which is incidental to the manufacture, sales and installation of the products of the company, or

Insurance company

(j) Inspection and service work done by employees of insurance rating bureaus, insurance service bureaus, insurance companies or insurance agents.

Architects

(j) The practice of persons registered in accordance with the provisions of the "Illinois Architectural Act."

Operating engineer

Section 30. (a) The provisions of this Act do not include the services ordinarily performed by those designated as chief engineer of plant operation and chief operating engineer, locomotive, stationary, marine, power plant or hoisting and portable engineers or electrical maintenance or service engineers, or engineers employed in connection with street lighting, traffic control signals, police and fire alarm systems, or the services ordinarily performed by any workman regularly employed as a locomotive, stationary, marine, power plant, or hoisting and portable engineer or electrical or service engineer for any corporation, contractor or employer.

Superintendent

(b) Nothing in this Act shall apply to or include the services ordinarily performed by those persons designated as supervising engineer or superintendent of power or supervising, electrical maintenance or service engineer who supervise the operation of or who operate machinery or equipment, or who supervise construction or the installation of equipment within their own plants.

Foreman

(c) The provisions of this Act shall not apply to the services of superintendents or foremen employed by contractors or owners in the construction of engineering works or the installation of equipment.

Name of Act

Section 31. This Act may be known and cited as "The Illinois Professional Engineering Act."

Effective date

Section 32. This Act shall be effective on August 1, 1943.

ELMER J. SCHNACKENBURG,
Speaker, House of Representatives.
HUGH W. CROSS,
President of the Senate.

Maryland Board

(Continued from Page 10)

and indecisive. These relate to the exclusion of persons who operate or maintain machinery or equipment, work as a contractor and supervision of construction as a foreman or superintendent, and the "saving clause" that the Registration Act shall not be construed to prevent or affect the practice of any other legally recognized profession or trade. The Act thus excludes stationary operating engineers and maintenance personnel, electricians, machinists, and similar skilled trades. The Board must necessarily give the closest scrutiny to all cases where there may be a possible conflict of jurisdiction with other registration and licensing agencies. It is most unusual to receive an application falling into a questionable area which is clear or explicit, and the help generally received from references in such instances is often of doubtful value, probably because the references do not appreciate the distinctions required by the Act.

An amount of confusion has arisen regarding the field of land surveying. As defined by the Act this deals with

the measurement and conveyancing of land and the establishment of land boundaries from the viewpoint of ownership. Much surveying of an engineering nature cannot be considered as land surveying.

The Act contains no provision for yearly renewal fees such as registration boards in other states collect, and the Board has been cognizant of the professions to the Maryland General Assembly that no such fees would be required for the administration of the Act. It was not necessary to employ regular clerical help until the deluge of applications at the end of May, and there has appeared no worthwhile reason why the Board should establish an office with an attendant. Inquiry in person concerning the provisions of the Act should be quite unnecessary for one of professional attainments, and it should also be obvious that evidence cannot be received in oral form for transmission to the Board. The bulk of the expenses of the first fiscal year, totalling $2,473.76, have consisted of the cost of forms, certificates, postage, typewriter and file facilities. Clerical expense will be greater in the future and the cost of engrossing certificates during the second year will be a major cost. Receipts during the first year arising from 1638 applications and 643 registrations were $25,100. The balance on hand of $22,626.24 should be sufficient to carry the Board's activities for several years unless its duties should be increased by further legislation. The fees from the few applications received since the first of June, 1940, have not been enough to support current expenses. Unnecessary expense should therefore be avoided if the administration of the Act is to be carried out without the collection of annual renewal fees.

Many applicants are impatient that their applications have not yet received consideration. The Board's work last summer was held up by mandamus proceedings instituted by a person whose application is still before the Board. With 900 unsettled applications on hand, similar threatened actions and avowed attempts by a few to have the Act declared unconstitutional on general grounds, are both unfair to the bulk of applicants who desire the Act to operate to the end of benefiting the profession and also wasteful of time and expense since court cases further delay the work of the Board.

The Board can consider only 24 to 40 applications in a 4 to 5 hour evening session; each is read and discussed, and many have to be referred back to the applicant and correspondence indicated with references. Such applications must be rehandled at a subsequent meeting when replies are in hand; often further correspondence is necessary before a determination can be made. Twenty-two meetings of the Board were held in ten months which was as frequent as could be arranged. Obviously, it will take about a year to consider all applications now on hand. Nothing is gained by soliciting the Board about the progress of individual applications. The Board has expressed its intention to give consideration first to those applicants who are practicing engineers and land surveyors; this led to a multitude of requests for early consideration because of many other diverse reasons not contemplated under the Act.

While it is too early to draw any conclusive deductions from the study of the applications on hand, certain general observations may be made. In the first place one is surprised to learn that over 1600 persons in Maryland consider themselves professional engineers or land surveyors or both. These professions, if all practice professionally, appear overcrowded and one wonders how they all make a living. This would seem to indicate that many applicants must be employed in sub-professional or other work, and were led to apply for professional registration for some reason ulterior to the desire to practice.

A second unexpected observation is the number of young persons and others with only limited amounts of either intensive or extensive experience who have applied for double registration as a professional engineer and a land surveyor. In almost all cases these people have had only the barest of academic training, usually of an elementary nature. A correlative observation is the type of experience these persons offer; it is limited either to the type of work that young engineering graduates usually perform or to the rule-of-thumb work of practical people requiring, if any, the minimum of mathematical and scientific knowledge as handed on by organizational precept and example. The cause of this situation is probably the difficulty in the civil engineering field of defining with accuracy the line between the types of minor projects, works, and duties which require basic knowledge for their prosecution and those which can be satisfied by only a superficial practicality.

One is also impressed with the relatively small number of applicants who are members of the national societies of their profession. This indicates a lack of true professional spirit, for one who practices a profession must participate in the promotion of the good of that profession and must contribute to the extension of knowledge in that profession. The excuse that one cannot afford such membership suggests a low paid profession. Can it be that many applicants cannot meet the requirements of membership in their respective national societies?

Weather - *Merriam*

(Continued from Page 8)

The great fly in the ointment is that this method is so sensitive that it is far more prone to pick up the defects in the original data than to isolate the fundamentals. Consequently, it is by no means generally applicable to existing records except as a detector of flaws which will almost invariably be confirmed when subjected to further test. Consequently, until we raise the standards of observation far beyond those of the present, the application of such a method is practically sure to lead to erroneous conclusions regarding the presence of long cycles, in fact cycles which are so long that the record covers but a fraction of the entire period from maximum to maximum.

Under the circumstances it would seem at first that the very existence of cycles is greatly to be doubted. At least it may be said that as yet there is no definite proof that the cycles purported to be identified, either long or short, are more than the products of the imperfection of mathematics in attempting to represent nature. On the other hand, there is likewise no definite proof that some of these are not reflections, imperfect perhaps, of real manifestations in nature. We, as engineers, must hold always an open mind and be ready to advance without prejudice.

It is obvious that if some of these are genuine, other evidences of their true nature will eventually be found, and as longer records are built up definite concordances will appear. As more perfect sets of observations are made the results of the last mentioned method of analysis become more reliable, and when this becomes true two of the limitations in our present mathematical treatment may be removed. Then perhaps the light will shine through the mist somewhat more clearly. In the meantime other methods of study may be developed and brought into action.

The subject is still of a scientific interest for if cycles do actually exist, they will undoubtedly play a far more

important part in unraveling the mystery of the constantly changing climatic conditions with their attending droughts and floods, storms and calm, than as a device to be used in continuing to guess the future.

And so in this matter it is still an open question—whether weather is to be or not to be.

Reprint from *"The Baltimore Engineer,"* Nov., 1941

Conservation - *Bode*

(Continued from Page 7)

recognize that the stage has been reached in this country where certain flood control, hydro-electric development and other engineering practices are desirable. It would seem again, however, that much of the difficulty arising from conflict of these developments with hunting, fishing, and other recreational interests could be avoided and many conservation values that are now destroyed could be saved, if thought were given to these interests at the time engineering works are planned and designed.

National Emergency Emphasizes Importance of Conservation

It is possible that in the minds of all of you, there is one question paramount as we discuss this subject; namely, do we have time for, and is it proper to stress these things in time of pressure and emergency such as we face now? My answer is, "yes". I think it is more important than ever. All of us pray that the present emergency will pass, and hope that the period of duress will be short lived. The aftermath will be less severe and recuperation will be more rapid, if we avoid some of the mistakes made in previous emergencies. During earlier emergencies we needed increase in farm products, but instead of intensifying production on land that we knew would stand the pressure, we attempted to bring into production large acreages of land which we should have known, had we taken the advice of conservationists, would never withstand the process of breaking out the native vegetation that held it in place. We created dust bowls that we may never be able to put back into grass land or any other production. We ruined waterfowl, fur-producing and other wildlife areas that have never become productive because operating costs, regardless of the amount of crop produced, have been so great that there is no possibility of net return. I know of two such areas. In either one of them several years ago you could have bought any of the land for the accrued taxes. They would have made excellent public fur-producing and recreation-producing areas. Public agencies investigated the possibility of establishing them as public areas. In both cases, the amount of back drainage bonds, the drainage pumping costs, etc. were several hundred dollars per acre, and, of course, the projects were impossible. In my opinion, it is sad to relate that in one of these areas a project is being developed again to do the same thing over and re-create the same condition. My prediction is that the only one that will make any money out of this sort of project is the man who is engaged in establishing the works necessary in a physical way, and that in a few years there will be another group of suckers who have acquired the land under these circumstances and who will again find that it is impossible to net any return on the high cost of maintaining the investment. This is the sort of situation that I believe engineers could help, and because in a period of this kind we are so very apt to lose our head and cause damage which can never be repaired, I believe it is more important than ever that we give some sane thought to the conservation relationships throughout America.

The Song of the Bridge

By Joseph Auslander

I am a Bridge.

I conquer. I carry. I connect.

I am an arabesque in steel, noble as Gothic, delicate as gossamer, powerful as hope, proud as dream.

Over my back thunders the incessant traffic of the world. My feet are rooted in the rivers. My arms reach out to the clouds.

I am like a woman who murmurs, "In my womb I bear the past, the present, and the future. Through me life flows to life, and kindles more life. I contain the world."

In the morning the sun leans over me like a lover and laughs into the water.

I lift men's eyes up. I fling their hearts forward. I stir their minds. I move their imaginations.

In the evening the moon turns my far-stretched strength of steel, my girders and my cables, into a poem, a phrase of white fire, a wizardry of music.

I am exalted, being a bearer of burdens. I am humbled, being a stairway for the stars.

I am work. I am wonder. I am fact. I am faith. I am as practical as a rivet.

I am as necessary as a song.

I am a Bridge.

From N. Y. Herald-Tribune.

Cattle Seen as Engineers

"Cattle are better civil engineers than most people," Joe M. Evans of El Paso told the Texas and Southwestern Cattle Raisers convention.

Evans, a member of one of the first families to settle in the Davis mountains, said everything he knows he learned from watching cattle.

Cattle trails are the work of good engineers, he maintains. They go through any kind of country, they always follow the easiest grade, and they go over a hill at the lowest saddle.

Weather Prophets

"Cattle are reliable weather prophets, too," Evans continued. "If, on a warm and sunny day you find them leaving the water holes and making for the mountains, you can be sure there's a storm coming. Cattle just know these things."

He believes the old Texas longhorns were more resourceful than the modern variety.

"Nobody fed them," he says. "They foraged for themselves. Nobody supplied water for them. They traveled miles across the country to spotty water holes."

Warns About Grass

Evans called attention to a passage in the Bible which shows that cattle were created before man and that grass came before cattle.

"I'd advise you cattlemen to think that over and do likewise," he added:

"I guess more cattlemen have gone broke from getting the cattle before the grass than for any other reason I know."

From San Antonio, Texas newspaper "Light" of Thursday, March 20, 1941.

Unionism - *Freund*

(Continued from Page 5)

exclusively either to the union, and union aims and purposes, or to the profession, and professional aims and purposes.

At this point my young man may interrupt to say, "All that may be true as far as professional engineering is concerned but I'm no professional engineer, and won't be for a long time. I'm not in responsible charge, I work under direction. Don't you think I should join the union now for what it has to offer? I can use more pay, you know. Afterwards, when I become professional I can quit the union. Why shouldn't I now have what the union can get for me?"

I am quite sure I should reply, "That seems possible in theory but you can't make it work out in practice. While in the union you would, and quite properly, lean on the union, and permit union officials to fight your battles for you. You would inevitably acquire habits and viewpoints of dependence as a result, and you could not be utterly dependent and at the same time build up the kind of personal, individual reputation for engineering competence which professional status calls for. Do you think you can suddenly discard habits and viewpoints of dependence when you are thirty-five years old, resign from the union, trust to your own resources for the first time in your life, and begin that late to build the personal reputation which you should have been building, and which your contemporaries have been building, for fifteen years? I think you could not. The union will not help you build a reputation. The union is not interested in personal reputations, the union is interested in the bargaining power of hundreds like you, massed together.

Offers Advice

"If you desperately need a larger income, if you and your wife cannot possibly exist on the salary which you can independently obtain, and if you have abundant evidence that the union can actually obtain for you the greater income you must have, then join the union.

"But let me warn you that the price which you must pay for these immediate advantages is almost certain exclusion from professional status later. You cannot be a union man now and a professional man later; you must now choose one or the other. I appreciate that it may be a terribly difficult choice, but you must choose.

"Likewise join the union if you have no desire whatever to become professional, if you lack the confidence to strike out for yourself, if you feel most secure in a group of your fellows, if, perhaps, you are secretly afraid that you will always belong to the multitude.

"If, on the other hand, you and your family can somehow struggle along through the lean and early years, if you can stretch and stretch again to make ends meet, if you are eager to become professional, if you know you can excel and if you are making progress, then you should certainly stay out of the union."

But the young engineer may continue, "It's easy for you to talk that way but you don't know what I'm up against. I am making progress, my wife and I can make ends meet and I want very much to become a professional engineer. But our drafting room is practically a closed shop. I don't care about the union, but I can't stay in the place unless I sign up."

I can think of only one answer. That one answer is, "Quit your job and find another just as soon as you possibly can. Oh yes, I know that that is a harsh thing for me to say, and probably a hard thing for you to do, for many reasons, but I say it because I am most firmly convinced that professional progress and union membership simply cannot go hand in hand."

Conclusions

I do not see how engineers, the engineering profession and labor unions can possibly evade the following conclusions:

1. Draftsmen, testers, technicians, instrument men, calculators, inspectors, operators and others in engineering type occupations will find it practically impossible to achieve full professional standing if they belong to labor unions.

2. Labor unions are just as appropriate among draftsmen, testers, etc., who do not aspire to professional standing as they are in any other high class, skilled craft.

3. If great numbers of professional engineers everywhere affiliate with labor unions, either because they choose to or because they are forced to, engineering occupations may continue to flourish, but the profession of engineering, as such, will most assuredly vanish from the face of the earth.

STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of THE AMERICAN ENGINEER, published Bi-monthly at Harrisburg, Pennsylvania, for year ending Oct. 1st, 1941.

State of District of Columbia } ss.
County of Washington }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Edward Larson, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the American Engineer and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers, are:

Publisher, Nat'l Society of Prof. Engrs., Washington, D. C.
Editor, Rob't Hall Craig, Harrisburg, Penna.
Business Manager, Edward Larson, Washington, D. C.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Nat'l Soc. of Prof. Engrs., a South Carolina Corp., not for profit.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid pubscribers during the twelve months preceding the date shown above is ..... (This information is required from daily publications only.)

EDWARD LARSON

Sworn to and subscribed before me this 30th day of Sept., 1941.
[Seal.]

MARY P. STONE, Notary Public, D. C.
(My commission expires Oct. 1, 1942)

(a) The practice of any other recognized profession or trade; or

Operators

(b) The activities essential to the operation and maintenance of machinery, equipment and structures or of mechanics in the performance of their established functions; or

Non-resident

(c) The practice of a person not a resident of and having no established place of business in this State, practicing or offering to practice herein professional engineering when such practice does not exceed in the aggregate more than thirty days in any calendar year; provided, such person is legally qualified by registration to practice professional engineering in his own state or country in which the requirements and qualifications for obtaining a certificate of registration are not lower than those specified in this Act; or

New resident

(d) The practice of a person who has, within the last preceding year, become a resident, practicing or offering to practice herein professional engineering, and who has filed with the Department an application for a certificate of registration and has paid the fee required by this Act; provided, such a person is legally qualified by registration to practice professional engineering in some other state or country in which the requirements and qualifications for obtaining a certificate of registration are not lower than those specified in this Act; and further provided, that such practice shall be permitted only for such a time as the Department requires for the consideration of the application for registration; or

Subordinate

(e) The work of an employee or a subordinate of a person holding a certificate of registration under this Act, or an employee of a person practicing lawfully under paragraphs (c) or (d) of this Section; provided such work is done under the direct responsibility, checking and supervision of a person holding a certificate of registration under this Act or a person practicing lawfully under paragraphs (c) or (d) of this Section; or

Federal employee

(f) The practice of officers and employees of the Government of the United States while engaged within this State in the practice of the profession of engineering, for said Government; or

Contractor

(g) The execution of work by a contractor as distinguished from the planning or design thereof or the supervision of the construction of such work as a foreman or superintendent; or

Private work

(h) Engineering service when such service is not for hire to the public and is not in connection with public employment; or

Manufacturer

(i) Engineering work and services as done by employees of a company engaged in manufacturing operations, or by employees of laboratory research affiliates of such a manufacturing company, which is incidental to the manufacture, sales and installation of the products of the company, or

Insurance company

(j) Inspection and service work done by employees of insurance rating bureaus, insurance service bureaus, insurance companies or insurance agents.

Architects

(j) The practice of persons registered in accordance with the provisions of the "Illinois Architectural Act."

Operating engineer

Section 30. (a) The provisions of this Act do not include the services ordinarily performed by those designated as chief engineer of plant operation and chief operating engineer, locomotive, stationary, marine, power plant or hoisting and portable engineers or electrical maintenance or service engineers, or engineers employed in connection with street lighting, traffic control signals, police and fire alarm systems, or the services ordinarily performed by any workman regularly employed as a locomotive, stationary, marine, power plant, or hoisting and portable engineer or electrical or service engineer for any corporation, contractor or employer.

Superintendent

(b) Nothing in this Act shall apply to or include the services ordinarily performed by those persons designated as supervising engineer or superintendent of power or supervising, electrical maintenance or service engineer who supervise the operation of or who operate machinery or equipment, or who supervise construction or the installation of equipment within their own plants.

Foreman

(c) The provisions of this Act shall not apply to the services of superintendents or foremen employed by contractors or owners in the construction of engineering works or the installation of equipment.

Name of Act

Section 31. This Act may be known and cited as "The Illinois Professional Engineering Act."

Effective date

Section 32. This Act shall be effective on August 1, 1943.

ELMER J. SCHNACKENBURG,
Speaker, House of Representatives.
HUGH W. CROSS,
President of the Senate.

Maryland Board

(Continued from Page 10)

and indecisive. These relate to the exclusion of persons who operate or maintain machinery or equipment, work as a contractor and supervision of construction as a foreman or superintendent, and the "saving clause" that the Registration Act shall not be construed to prevent or affect the practice of any other legally recognized profession or trade. The Act thus excludes stationary operating engineers and maintenance personnel, electricians, machinists, and similar skilled trades. The Board must necessarily give the closest scrutiny to all cases where there may be a possible conflict of jurisdiction with other registration and licensing agencies. It is most unusual to receive an application falling into a questionable area which is clear or explicit, and the help generally received from references in such instances is often of doubtful value, probably because the references do not appreciate the distinctions required by the Act.

An amount of confusion has arisen regarding the field of land surveying. As defined by the Act this deals with

the measurement and conveyancing of land and the establishment of land boundaries from the viewpoint of ownership. Much surveying of an engineering nature cannot be considered as land surveying.

The Act contains no provision for yearly renewal fees such as registration boards in other states collect, and the Board has been cognizant of the professions to the Maryland General Assembly that no such fees would be required for the administration of the Act. It was not necessary to employ regular clerical help until the deluge of applications at the end of May, and there has appeared no worthwhile reason why the Board should establish an office with an attendant. Inquiry in person concerning the provisions of the Act should be quite unnecessary for one of professional attainments, and it should also be obvious that evidence cannot be received in oral form for transmission to the Board. The bulk of the expenses of the first fiscal year, totalling $2,473.76, have consisted of the cost of forms, certificates, postage, typewriter and file facilities. Clerical expense will be greater in the future and the cost of engrossing certificates during the second year will be a major cost. Receipts during the first year arising from 1638 applications and 643 registrations were $25,100. The balance on hand of $22,626.24 should be sufficient to carry the Board's activities for several years unless its duties should be increased by further legislation. The fees from the few applications received since the first of June, 1940, have not been enough to support current expenses. Unnecessary expense should therefore be avoided if the administration of the Act is to be carried out without the collection of annual renewal fees.

Many applicants are impatient that their applications have not yet received consideration. The Board's work last summer was held up by mandamus proceedings instituted by a person whose application is still before the Board. With 900 unsettled applications on hand, similar threatened actions and avowed attempts by a few to have the Act declared unconstitutional on general grounds, are both unfair to the bulk of applicants who desire the Act to operate to the end of benefiting the profession and also wasteful of time and expense since court cases further delay the work of the Board.

The Board can consider only 24 to 40 applications in a 4 to 5 hour evening session; each is read and discussed, and many have to be referred back to the applicant and correspondence indicated with references. Such applications must be rehandled at a subsequent meeting when replies are in hand; often further correspondence is necessary before a determination can be made. Twenty-two meetings of the Board were held in ten months which was as frequent as could be arranged. Obviously, it will take about a year to consider all applications now on hand. Nothing is gained by soliciting the Board about the progress of individual applications. The Board has expressed its intention to give consideration first to those applicants who are practicing engineers and land surveyors; this led to a multitude of requests for early consideration because of many other diverse reasons not contemplated under the Act.

While it is too early to draw any conclusive deductions from the study of the applications on hand, certain general observations may be made. In the first place one is surprised to learn that over 1600 persons in Maryland consider themselves professional engineers or land surveyors or both. These professions, if all practice professionally, appear overcrowded and one wonders how they all make a living. This would seem to indicate that many applicants must be employed in sub-professional or other work, and were led to apply for professional registration for some reason ulterior to the desire to practice.

A second unexpected observation is the number of young persons and others with only limited amounts of either intensive or extensive experience who have applied for double registration as a professional engineer and a land surveyor. In almost all cases these people have had only the barest of academic training, usually of an elementary nature. A correlative observation is the type of experience these persons offer; it is limited either to the type of work that young engineering graduates usually perform or to the rule-of-thumb work of practical people requiring, if any, the minimum of mathematical and scientific knowledge as handed on by organizational precept and example. The cause of this situation is probably the difficulty in the civil engineering field of defining with accuracy the line between the types of minor projects, works, and duties which require basic knowledge for their prosecution and those which can be satisfied by only a superficial practicality.

One is also impressed with the relatively small number of applicants who are members of the national societies of their profession. This indicates a lack of true professional spirit, for one who practices a profession must participate in the promotion of the good of that profession and must contribute to the extension of knowledge in that profession. The excuse that one cannot afford such membership suggests a low paid profession. Can it be that many applicants cannot meet the requirements of membership in their respective national societies?

Weather - *Merriam*

(Continued from Page 8)

The great fly in the ointment is that this method is so sensitive that it is far more prone to pick up the defects in the original data than to isolate the fundamentals. Consequently, it is by no means generally applicable to existing records except as a detector of flaws which will almost invariably be confirmed when subjected to further test. Consequently, until we raise the standards of observation far beyond those of the present, the application of such a method is practically sure to lead to erroneous conclusions regarding the presence of long cycles, in fact cycles which are so long that the record covers but a fraction of the entire period from maximum to maximum.

Under the circumstances it would seem at first that the very existence of cycles is greatly to be doubted. At least it may be said that as yet there is no definite proof that the cycles purported to be identified, either long or short, are more than the products of the imperfection of mathematics in attempting to represent nature. On the other hand, there is likewise no definite proof that some of these are not reflections, imperfect perhaps, of real manifestations in nature. We, as engineers, must hold always an open mind and be ready to advance without prejudice.

It is obvious that if some of these are genuine, other evidences of their true nature will eventually be found, and as longer records are built up definite concordances will appear. As more perfect sets of observations are made the results of the last mentioned method of analysis become more reliable, and when this becomes true two of the limitations in our present mathematical treatment may be removed. Then perhaps the light will shine through the mist somewhat more clearly. In the meantime other methods of study may be developed and brought into action.

The subject is still of a scientific interest for if cycles do actually exist, they will undoubtedly play a far more

important part in unraveling the mystery of the constantly changing climatic conditions with their attending droughts and floods, storms and calm, than as a device to be used in continuing to guess the future.

And so in this matter it is still an open question—whether weather is to be or not to be.

Reprint from *"The Baltimore Engineer,"* Nov., 1941

Conservation - *Bode*

(Continued from Page 7)

recognize that the stage has been reached in this country where certain flood control, hydro-electric development and other engineering practices are desirable. It would seem again, however, that much of the difficulty arising from conflict of these developments with hunting, fishing, and other recreational interests could be avoided and many conservation values that are now destroyed could be saved, if thought were given to these interests at the time engineering works are planned and designed.

National Emergency Emphasizes Importance of Conservation

It is possible that in the minds of all of you, there is one question paramount as we discuss this subject; namely, do we have time for, and is it proper to stress these things in time of pressure and emergency such as we face now? My answer is, "yes". I think it is more important than ever. All of us pray that the present emergency will pass, and hope that the period of duress will be short lived. The aftermath will be less severe and recuperation will be more rapid, if we avoid some of the mistakes made in previous emergencies. During earlier emergencies we needed increase in farm products, but instead of intensifying production on land that we knew would stand the pressure, we attempted to bring into production large acreages of land which we should have known, had we taken the advice of conservationists, would never withstand the process of breaking out the native vegetation that held it in place. We created dust bowls that we may never be able to put back into grass land or any other production. We ruined waterfowl, fur-producing and other wildlife areas that have never become productive because operating costs, regardless of the amount of crop produced, have been so great that there is no possibility of net return. I know of two such areas. In either one of them several years ago you could have bought any of the land for the accrued taxes. They would have made excellent public fur-producing and recreation-producing areas. Public agencies investigated the possibility of establishing them as public areas. In both cases, the amount of back drainage bonds, the drainage pumping costs, etc. were several hundred dollars per acre, and, of course, the projects were impossible. In my opinion, it is sad to relate that in one of these areas a project is being developed again to do the same thing over and re-create the same condition. My prediction is that the only one that will make any money out of this sort of project is the man who is engaged in establishing the works necessary in a physical way, and that in a few years there will be another group of suckers who have acquired the land under these circumstances and who will again find that it is impossible to net any return on the high cost of maintaining the investment. This is the sort of situation that I believe engineers could help, and because in a period of this kind we are so very apt to lose our head and cause damage which can never be repaired, I believe it is more important than ever that we give some sane thought to the conservation relationships throughout America.

The Song of the Bridge

By Joseph Auslander

I am a Bridge.

I conquer. I carry. I connect.

I am an arabesque in steel, noble as Gothic, delicate as gossamer, powerful as hope, proud as dream.

Over my back thunders the incessant traffic of the world. My feet are rooted in the rivers. My arms reach out to the clouds.

I am like a woman who murmurs, "In my womb I bear the past, the present, and the future. Through me life flows to life, and kindles more life. I contain the world."

In the morning the sun leans over me like a lover and laughs into the water.

I lift men's eyes up. I fling their hearts forward. I stir their minds. I move their imaginations.

In the evening the moon turns my far-stretched strength of steel, my girders and my cables, into a poem, a phrase of white fire, a wizardry of music.

I am exalted, being a bearer of burdens. I am humbled, being a stairway for the stars.

I am work. I am wonder. I am fact. I am faith. I am as practical as a rivet.

I am as necessary as a song.

I am a Bridge.

From N. Y. Herald-Tribune.

Cattle Seen as Engineers

"Cattle are better civil engineers than most people," Joe M. Evans of El Paso told the Texas and Southwestern Cattle Raisers convention.

Evans, a member of one of the first families to settle in the Davis mountains, said everything he knows he learned from watching cattle.

Cattle trails are the work of good engineers, he maintains. They go through any kind of country, they always follow the easiest grade, and they go over a hill at the lowest saddle.

Weather Prophets

"Cattle are reliable weather prophets, too," Evans continued. "If, on a warm and sunny day you find them leaving the water holes and making for the mountains, you can be sure there's a storm coming. Cattle just know these things."

He believes the old Texas longhorns were more resourceful than the modern variety.

"Nobody fed them," he says. "They foraged for themselves. Nobody supplied water for them. They traveled miles across the country to spotty water holes."

Warns About Grass

Evans called attention to a passage in the Bible which shows that cattle were created before man and that grass came before cattle.

"I'd advise you cattlemen to think that over and do likewise," he added:

"I guess more cattlemen have gone broke from getting the cattle before the grass than for any other reason I know."

From San Antonio, Texas newspaper "Light" of Thursday, March 20, 1941.

Unionism - *Freund*

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State of District of Columbia } ss.
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EDWARD LARSON

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MARY P. STONE, Notary Public, D. C.
(My commission expires Oct. 1, 1942)